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MONTHLY MAGAZINE.

MAY, 1879.

FEW APPRECIATE the blessings they enjoy, and the old saying, that men only learn the value of blessings by their loss, is more truthful than many old saws. Those who live in cities look upon the country as the home of comfort, and even luxury; they believe the atmosphere is perfumed with odors from a thousand flowers, while the meadows and groves and lanes are redolent with health, and flooded with milk and honey. They receive the quart of milk and water, if nothing worse, dished out every morning by the milkman, in a tin measure, and, while they look upon its azure surface, think of the country and its rich, golden cream; while the poor quart of ripe and unripe strawberries, jammed out of all resemblance to the fruit of the Strawberry plant, reminds them of the large, luscious berries, almost too much for a mouthful, eaten in early days in the country, and they feel sad, and think truly that God made the country, but the city is man's unhappy work, and sigh for the fine fruits and fresh vegetables and the breezy lawns and shady woods, and the health and vigor of former days, and resolve that when a few more dollars are gathered, with a few more gray hairs, they will hie away to the country, there to enjoy in repose the evening of life and gently await the setting sun.

The dweller in the country, however, seldom appreciates or enjoys the blessings and luxuries that are attainable, and almost without money

or price. He may have corn, and pork, and beef, and mutton, and potatoes and bread from the fields, and the commonest laborer in the cities obtain these; but the real luxuries of life come not from the broad acres, but from the little garden patch—the acre or so that furnishes the Raspberries, Strawberries, Currants, Plums and Pears, and Asparagus, Beans, Peas, Cauliflower, Celery, and many other delicate things that not only pay, but give health and comfort. It is just this little piece of ground that makes all the difference between very ordinary and very luxurious living, and that, we think, while adding much to the pleasure, will subtract a good deal from doctor's bills. So we thought it well at this spring season to call the attention of our readers to the subject, with such suggestions as were likely to be most needed, instead of responding to a few inquiries, which are now before us, in the usual manner.

THE FARMER'S GARDEN.

SOIL AND SITUATION.

In selecting a spot for a vegetable garden, the prime necessity is to have it near, or within easy distance, of the house; not even superior qualities of soil, important as this condition is, can equal the advantage of having the garden so near that it can be entered at a moment's notice. It is a place where, at certain seasons, constant watchfulness must be exercised, and, often, it must be resorted to several times a day

to cull its products. When, on the farm, it is placed so far away, as not unsequently we have known it to be, that a man must be called from his work, and sent perhaps for some little thing, the profit of the garden is nearly, and the pleasure of it wholly, lost. The chances, too, in this case, for the successful depredations of insects, which sometimes increase with amazing rapidity, are greatly increased, because not at first noticed. The old adage, "A stitch in time saves nine," applies no where better than in the destruction of noxious insects; and this stitch it is often impossible to take when the garden is at a distance, for the reason that the mischief is done before known, or before the proper remedy can be applied.

The surface of the garden should be nearly level, or only gently inclining, but, if it is necessary to locate it on sloping ground, a southern or eastern aspect is to be preferred. Ground inclining to the west or north, unless the inclination is very slight indeed, should certainly be avoided if possible.

FENCING AND SHELTER.

A good fence, or some other means of security from the intrusion of animals, either quadruped or biped, is an essential requirement. A post and board, or picket, fence; barbed wire, now becoming so well known, strained along on firm posts; hedges of different kinds, but especially of Honey Locust, Osage Orange, or Barberry, will serve the purpose; circumstances will determine which should be employed. Usually the fence or wire will precede the hedge.

Security from the invasion of animals effected, our next concern should be shelter from the severe winds. This is a subject to which the attention of our rural friends has frequently been called during the last twenty years, but, taking the country at large, few have accepted the advice. The indifference to this matter is due to a variety of causes, and, perhaps the leading one is that it will take a number of years to make an effective screen. Now, this very fact should incite to prompt action in planting, if wind-screens are really desirable, for, if we desire the benefit of them, the sooner they are planted the better. Such a plantation is a permanent improvement and adds to the attractiveness and value of the place, and, therefore, ought to be made with full confidence in its propriety in a pecuniary view. We imagine that few comprehend the real value of a wind-screen for a garden; as they have never experienced the benefits derived from it, they have but a faint conception of the disadvantage at which they labor, with the garden fully exposed. A garden surrounded with a good wind-screen

will usually show a temperature several degrees higher than that of the outside. Vegetation will start in it several days earlier in the spring, advance more rapidly in growth, and be secure from frost somewhat later in the fall, than in open, exposed ground. If a screen is not planted entirely around the garden, it should, at least, extend along the west and north boundaries, but it is better to surround it. The most suitable trees for wind-screens are the American Arbor-Vitæ, *Thuja occidentalis*, and the Norway Spruce, *Abies excelsa*; these have been most thoroughly proved, by their ease of transplanting, their vigorous growth and hardiness, to be admirably adapted for wind-breakers. There are two methods followed in forming wind-screens; one is to plant the trees in a single row about two feet apart and, as they grow up together, to trim them slightly into shape, so that they will present the appearance of a compact hedge. Another way is to plant the trees about eight or ten feet apart in a single row, or, if in two rows, twelve or fifteen feet distant from each other, and the trees in each row are planted opposite the spaces in the other. The trees in such a screen are not cut, but allowed to grow up naturally. Such a belt of trees soon makes an effective screen, and where the amount of space required is not considered essential, this mode of planting may be adopted with a certainty of no attention afterwards in trimming. For a belt of untrimmed trees the Arbor Vitæ should be planted closer than the Spruce, or about six feet apart.

THE SIZE AND PLANTING.

The size of a garden will be determined to some extent by the needs of the family, but it is desirable for a farm-garden to be of ample extent, or to contain not less than an acre. With such a space an allotment can be made for the finer fruits, such as Pears and Plums, as well as for Grapes, Raspberries and other small fruits. When the space devoted exclusively to the culture of vegetables is over a quarter of an acre, there will be a decided advantage in having it of as long a form as it conveniently can be, so that everything may be planted in rows to allow of a horse or hand cultivator. An old horse that has been trained will work in very narrow rows. Strawberries should be one of the crops of the vegetable ground, and be successively planted on different parts of it. The plants should be set in rows the whole length of the ground, and a new planting be made in August of each year. When a Strawberry bed has borne two crops it should be turned under, and a crop of Turnips can be taken from the ground. In this way, except at midsummer,

there would always be three strips of ground the length of the garden devoted to Strawberries. These strips will consist of one or more rows of plants, according to the quantity of berries required. The rows should be planted two feet distant from each other, and the plants about fifteen inches apart. Raspberry bushes can be planted in rows about four feet apart, but they will occupy the ground longer than Strawberries. Currants, Gooseberries and Rhubarb can be grown in rows in the same way, and be much better for the extra cultivation they will get, than they would be if placed under a fence and allowed to be grown up with grass, as is too frequently the case.

DRAINING AND IMPROVING THE SOIL.

In the preparation of a piece of ground for a garden, attention should first be given to drainage. The places where tile, or underground, drainage is not required, even on high or rolling ground, are very few. So much has been written on this subject in this country, the mode of tile draining is pretty well understood, at least theoretically, but practically it must still be considered here an unlearned art. Deep tillage of the soil, so necessary for the best results in vegetable culture, cannot be performed successfully without thorough drainage, and the importance of it cannot be too strongly enforced; especially with heavy soils it is a matter of the highest importance, for its effect upon such soils is to lighten them and open them to the action of the air.

Heavy soils can be very much benefited by the use of a refuse substance now generally wasted or applied to the roads—we refer to coal ashes. It is quite satisfactorily shown that coal ashes, though not having manurial value sufficient to warrant any expense for carriage or long-hauling, may, with advantage, be spread upon the ground where they are produced. Mixed with heavy soils their mechanical effect is to lighten it and make it porous and friable. A number of experiments with coal ashes, publicly reported within the last year or two, leave no doubt that they have, at least, some slight value as manure, and that mixed with heavy land their effect is very beneficial. Upon this subject a practical cultivator, through the columns of a late number of a British journal, gives the following advice and corroborative testimony:

“A third part of ashes to two-thirds of soil will not be too much. You will very likely not have enough to do this at once, therefore use what you have, and repeat the dressing again and again till the soil, however wet it may be, parts readily from the tool. It may require

three or four years to accomplish this if you have only the ashes of an ordinary household at your disposal. But pray remember that once well done it will give you no further trouble; for not only do ashes lighten a heavy soil, but they also render material assistance to its drainage, and it becomes so porous that the passage of rain water is secured—hence it is comparatively dry and warm, it is open to the action of the air, and is therefore sweetened and made more fertile.”

MANURE.

The necessity of manure is so well understood that a hint about it seems almost superfluous, and yet, upon a subject so important a few words can never be ill-timed. When a piece of ordinary ground is properly fitted in other respects, the amount and character of the manure applied to it determines the crop, and this fact must ever be judiciously taken into account. The production and proper application of manure will be one of the first cares of the good cultivator. The well-rotted dung of domestic animals will always remain the standard substance of fertility, as it contains all the elements of manure in the best form for the nutrition of plants.

Without entering into the details of the management and use of such manures, which have been fully and frequently treated upon by able and experienced persons, through the medium of the agricultural press and by works especially devoted the subject, we wish to notice an extra source or two of manure frequently overlooked or neglected. The decaying vines and tops of vegetables, weeds, clippings of shrubs, and all refuse vegetables not fed to animals, should be carefully collected together, from time to time, into a heap, and composted with soil. Such things should never be allowed to lie scattered about, but be gathered up without delay; in this way the neat gardener will be doubly repaid for his care, by tidy grounds and a quantity of good manure.

For the country, the dry-earth closet system by means of movable boxes, has every advantage to recommend it. It may be, that in the cities and larger towns, where extensive systems of sewers and water-works are in operation, it would be inexpedient to introduce the dry-earth closet system, for the reason that the value of the manure so obtained would not be equivalent to its cost and the expense of hauling it out to the lands where it could be used. In the country, however, there are no such expenses. The dry earth is to be had in the road for the taking, the manure is certainly worth more than it would cost to haul it out on to the grounds, and the advantage of pure air to the household

can not be estimated. We believe, if necessary, state sanitary laws should be enacted which should require this method to be adopted throughout the country, in country villages and even by those inhabitants of towns and cities where water-works are established who do not avail themselves of them. Wherever coal is used as fuel, there is an accumulation of ashes which can be employed without expense, instead of dry earth. In the cities the refuse ashes are now removed at the general expense, and it would certainly be more satisfactory if, at the same time, could be removed the excrements which are now the stench of our nostrils and, no doubt, the prolific source of disease, through the air, and in the water by filtration into the wells. In the smaller towns and country villages there would be no expense in the removal of this substance, as the distance from the grounds where it could be applied would be so short that the farmers and gardeners would eagerly collect it, if to be had for the hauling.

We have considered this question only as it relates to manure, because, as such, it is connected with our general subject; but we do not disregard the fact that from a sanitary point of view it is far more important, and should have the serious attention of every one. The horrors of the recent scourge that has afflicted portions of the South are still too vivid, and the intimate connection of the disease with want of drainage, or choked sewers and reeking cess-pools, is too well known to allow of our dismissing the subject of the cleanliness of our premises without the gravest consideration. Pecuniarily and physically it will be better for us, as a people, to work a reform in this respect which will place us on a higher plane of civilization.

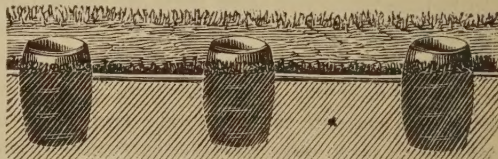
WEEDS AND WATER.

"Ill weeds grow apace," is an adage as true as it is old. No one can afford to raise weeds. It is far cheaper to stir the ground frequently, with hoe or cultivator, than to allow weeds to grow, even a little. Weed seeds are always ready to grow. They come in with the manure or are blown in by the winds and, by a few days' neglect, weeds will often get such a start as materially to injure a crop. Frequent stirring of the ground not only prevents the weeds from coming in, but promotes the growth of the crop, and thus every advantage is in favor of thorough cultivation.

Over all that broad stretch of our favored land where the rainfall is abundant, the lack of water for vegetation is only occasionally experienced and consequently, like other blessings which we freely enjoy, its real value is not properly estimated. Almost every season, and

in every part of the country, there are short times of drought when a good and convenient supply of water would be of great advantage, at least to some particular crop or crops in the garden. If it is possible to have the garden supplied with water, it should never be neglected. If no better source is available, a good well, with a pump and capacious tanks for tempering the water by the heat of the sun and air, will be found of great service. A well would usually be most convenient if situated near the center of the garden, but it may be necessary or even advantageous sometimes to locate it in some other part of the grounds. Wherever it is located there should be hose, or pipes, or some other means by which it can be delivered to any part of the ground.

While in Germany, we were much interested in the attention given to water for the gardens. In many of the vegetable gardens provision is made for artificial watering, and there is quite as much necessity for this practice in America as in Germany, for almost every season, at some time in the growth of a plant, it suffers from drouth, and never attains perfect maturity. We do not recollect ever seeing an attempt to grow Cauliflower, in that country, without the aid of water. The custom is to raise water into a tank elevated several feet above the level of the surface of the soil. It is raised to these tanks by wind or horse power, usually, though in one case, where a little brook passed through



one corner of the field, a water-wheel was used. From these tanks water is carried by pipes through all the main walks, open casks being placed at certain distances, from which the water is usually carried in watering pots to the beds, though often a simple force-pump is used for scattering it over the plants. The little engraving will show the way water is conveyed along the walks. After seeing the splendid Cauliflower growing around Erfurt, and observing the pains taken in its culture, I did not wonder that we so often failed in our hot, dry climate. While thus giving the very best methods of growing choice vegetables, we do not wish it to be understood that fair crops cannot be raised without this trouble and expense.

Many other general hints in relation to the garden might be given, but those which we have now noticed are the most important ones, and could be greatly elaborated. Much is left to the suggestion of our readers.

THE PETUNIA.

A great many years ago, about 1826, possibly a year or two later, we first saw a Petunia plant. It was a novelty—a strange flower from a flowery land, South America, and it was carefully treated in greenhouses. The flower was white and small, and looked somewhat as if made of paper—such a flower as would now be destroyed if by chance seen growing accidentally in our gardens. The novelty soon subsided, and, although it was ascertained that it could be grown in gardens, it had not sufficient merit to gain much popular favor. A little later, however, about 1831, to the astonishment of the floral world, it was announced that a new Petunia, of a purple color, had been discovered in Buenos Ayres. It was first flowered and seeded in the Botanic Gardens of Glasgow, and thence seed was sent all over Europe and to America, and no flower ever became a greater favorite in so short a time, and few have maintained merited popularity so long. Nearly thirty years ago a double Petunia was grown, and rapidly increased by cuttings. It was only semi-double, and white, but it was the commencement of a new era in Petunia culture, and now we have double Petunias as large and almost as beautiful as Roses.

It is not our purpose, however, to give a history of the Petunia and its rapid progress, from a little, single, papery-flower, either white or purple, to its present advanced condition, but merely to show what the Petunia is at present.

The Petunia, as now cultivated, consists of three pretty distinct classes—the *Grandiflora*, *Small Flowered*, and *Double*. The grandiflora varieties make quite a strong, succulent growth, and the stems and leaves are sticky to the touch. These bear a few very large, magnificent flowers, often from three to four inches across. They bear but few seeds, and these are obtained at great expense of labor. In the open ground they give no seed, so plants for seed must be grown in pots on stages, sheltered from rain and dews, and fertilization is accomplished by hand, the pollen being distributed with the aid of a camel-hair brush. Of course, seed obtained in this way is always expensive, but the wonderful size of the flowers and richness of the coloring well repays the cost. In this class we have a fringed Petunia, new and unique.

The Double Petunia gives no seed, and those that will produce double flowers are obtained by fertilizing single flowers with the pollen of the double, in the manner previously described. This is the reason our correspondent in the April number could not obtain seed from these kinds.

The Small-Flowered kinds are of a slender, wiry growth, but cover a good deal of ground, and bear an immense number of flowers from spring until destroyed by frost in the autumn. The colors are brilliant and the marking most singular; indeed, scarcely two flowers are alike, even on the same plant. There are few an-



HYBRIDIZING.

nuals, or few flowers of any kind that will make a more brilliant bed all the long summer. The seed germinates freely, and seed is also perfected in the open ground. Seed may be sown in a hot-bed or cold-frame, or in boxes in the house, and will do very well in a nicely prepared seed-bed in the garden. Set plants in the flowering-beds about eighteen inches apart. Our colored plate shows a collection of the Small-Flowered Petunias, just as gathered from our beds last autumn. The pink flowers are a variety known as Countess of Ellesmere, which comes usually quite true from seed, and makes

a very pretty bed of bright pink flowers. This is, in fact, about the only variety upon the color of which we can place any reliance, except the plants are grown from cuttings. At some future time we will give colored plates of the large-flowered and double sorts.

Some time since the editor of the *Illustrated Christian Weekly* visited our grounds and was

if planted in the open ground, and indeed bear none in the house unless supplied with plenty of air and sheltered from the rains and dews; and even then every flower must be artificially fertilized. To meet these requirements a roof, partly of glass, is erected on posts, and entirely open at the sides and ends, as will be seen in the engraving. The plants are grown in pots,



FERTILIZING SINGLE PETUNIAS WITH POLLEN FROM DOUBLE FLOWERS.

so much interested in the process of obtaining Petunia seed that he took a pencil sketch of the operation, which was published in that journal, with the remarks below, which we thought our readers might like to see and read:

"Many kinds of plants do not perfect their seed in the open ground, and to accommodate these half a dozen or more houses are erected. We give a sketch of two of these houses, and also of one devoted to the finer kinds of Petunias, known to florists as *Petunia grandiflora*. This variety has very large flowers, often four or five inches in diameter, but produce no seed

and every morning each opening flower is fertilized by collecting the pollen on a camel's-hair brush and distributing it among the pistils. This plan is generally, though not always, successful.

The double Petunia bears no seed, the natural organs of the flower being destroyed by doubling. Seeds that produce double flowers are obtained in this interesting way: A house is filled with fine single-flowering plants, in pots, while another house near by is filled with plants bearing double flowers. The double flower, while it has no pistils, and but very imperfect stamens, does occasionally produce a

little pollen. The operator picks a basket of double flowers and takes them to the house containing single Petunias. He then tears the double flowers in pieces, searching carefully for pollen, and collecting it with a camel's-hair brush. Every grain is worth more and costs more than its weight in gold. This pollen is transferred to the pistils of the single flowers, their own stamens being first removed. It is thus easy to understand why some kinds of flower-seeds are not cheap."

After the above was in type, we received a communication, which will be found on another page, from a correspondent in Oregon, who obtains seed quite freely from the large-flowered varieties, when grown in the open ground. California and Oregon seem to make laws of their own, and pay little regard to the rules which govern the vegetable world in other places.

THE ROCKET LARKSPUR.

One of the prettiest hardy annual flowers is the Rocket Larkspur. Years ago it was quite common, and to be seen in almost every garden, but we might now travel a long distance to find a good bed of this bright flower. Last season we saw and was greatly pleased with a fine show, in a bed some twelve feet in length by four or five in width, and we determined at that time to call attention to this neglected flower. It will make a bed almost, if not quite, as brilliant as one of Hyacinths, and is best planted in about the same manner, in rows, and at about the same distance apart. The plant grows about a foot in height, with one straight stem, the lower part, for a few inches, covered with fine, hair-like leaves, and the upper part a dense spike of flowers. The Larkspur is so hardy that, in most places, the seed may be sown in the autumn; but, if committed to the soil very early in the spring, flowers will be obtained in

early summer. The earlier the Dwarf or Rocket Larkspur can be induced to flower the better, for it seems to like a rather cool atmos-

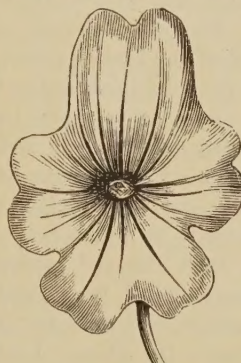


phere, and certainly does not object to a cool, damp soil.

Our engravings show a plant cut just below the flowers, and a little plant, also a flower of the natural size. The colors are blue, white and pink.

BROWALLIA AND ERYSIMUM.

Before too late in the season, we desire to call attention to two annuals, little cultivated but very pleasing. The first is the Browallia, of



BROWALLIA.

which there are several varieties, white and blue. The seed germinates readily, and it does well in the house. We have had favorable reports from many persons, asking us to recommend the Browallias for winter-blooming. The plants grow about eighteen inches in height, and the engraving shows the natural size of the flowers.

We have always had a strong liking for the Wallflower, but it is not easily kept in a northern climate, so, as a rather poor substitute, we like the Erysimum, because it resembles a single Wallflower in the form of its flowers and color, being yellow and orange. It blooms abundantly, and late in the season furnishes a large quantity of flowers for cutting. It belongs to the Mustard family, and perhaps some of our readers may think it resembles, too much, that weed in its wild state.



ERYSIMUM.



RED SPIDER ON CELERY.

JAMES VICK:—In your March number of the *MAGAZINE* you publish a letter from K. T. R. GRAVES, Au Sable Forks, N. Y., in which he describes a disease, or blight, that injures his Celery, and you ask for your readers' observation in regard to the matter. The same trouble has affected my Celery, more or less, for three or four years. I never knew or heard of it before that time, and it is now general here in certain kinds of ground. It first made its appearance three years ago in my garden, but had affected others the season before. It is the effects of a very small insect, so small that it can scarcely be seen with the naked eye, that attaches itself to the under side of the outer leaves in large numbers. The insects weave a web, and draw the life out of the leaf in spots; the spots get yellow, and the leaf turns yellow and dies; the leaf-stalk then decays down to the stalk, the next leaves become affected, and so on, until there remains only two or three of the center leaves. This insect, when placed under the microscope, proves to be nothing else, in appearance at least, than the red spider you described in the *MAGAZINE*. I wrote you about it two or three years ago, and gave you a cut of it when placed under the glass. Last year it affected my Celery but very little. I will give you my observations in regard to it. This insect rarely, if ever, attacks healthy, rapidly-growing plants of Celery; therefore, care should be taken to get only stocky, large and vigorous plants to set in the first place; then transplant them to a bed nine or twelve inches apart, in well-prepared and rich ground, so that when you transplant to your trench in July, you can take up the plants, after soaking the ground with water, with such a large amount of dirt adhering that the plant will not be checked when placed in the trench. After transplanting into the trench do not wet the ground and press the mud around the plants, or, when it dries, it will bake hard; press dry dirt around the plants and then wet the ground carefully afterwards. If you check the growth of

the plant when transplanted to the trench, or elsewhere, this insect will attack it the first dry, hot weather that comes.

Celery should not be grown too often on the same ground, but should be changed frequently. When first set out, the plants should be forced into as rapid a growth as possible, during the hot, dry weather, by the use of manure-water. The best situation for this crop is mellow, rich ground. I have seen Celery, in the last few years, grown in low, moist ground, that was very rank, green, and perfectly healthy, when close to it, on higher and poorer ground, the insect I have spoken of had almost destroyed other Celery. I have also seen Celery at one end of a row affected by this insect, when that at the other end, which was shaded somewhat, was free from it. I think I can now avoid the attacks of the insect by observing the precautions suggested above. I have also noticed the effects of this insect on other plants, generally during droughts. My Boston Market Celery is damaged the least by this insect.—J. B. H., *Huntington, Ind.*

MOUNTAINS OF OREGON.

MR. VICK:—I will undertake to write you a letter, but it will be, no doubt, crooked English, for what else can be expected of a Swede?

This season I had two Crown Imperials in bloom; my Hyacinths bloomed nicely and increased well. I got seventeen young bulbs from twelve old ones, all being full half the size of the old ones. Some Dahlias grew six or seven feet high, and commenced to bloom in July, the first flowers being the largest and handsomest, for the reason, I suppose, that, later in the season, the nights are cold and dewy. The last summer here was considered to be unusually cold. The Gladiolus plants kept in bloom about two months, and were splendid, sending up their tall spikes of flowers one after the other, not all blooming at once. Ten Weeks Stock, Sweet Peas, Candytuft, Dianthus Chinensis are lovely flowers for small bouquets, and easily grown; Zinnias, Pansies

and Antirrhinum did well. And now come to the Petunias, O, the blazing Petunias! They appeared like a sheet of flame from the time they commenced blooming until destroyed by frost. The varieties I had were those of *grandiflora venosa*, and from choice seed from show flowers; most of the plants grew about four feet high, branched from the ground, and were covered with flowers, each from two to four inches across, the brilliancy of which was dazzling in the noontide sun. I understand that the grandiflora varieties produce no seed in open ground, but these kinds I have mentioned seeded quite freely. I had a paper of double Petunia seeds, and half of the plants produced double flowers, and they were splendid, and so, also, were the single ones that some of the plants produced. Among the lot was one double white Petunia which was the rival of any Rose I have ever seen—one flower measured five inches across. I am well pleased, having done better than I anticipated.

We cannot get vegetables and flowers to grow easily here. To raise anything like decent vegetation we have to work up our garden soil well and give it plenty of water. Our garden soil is sand with gravel bottom. To irrigate my garden I run water from the mining ditch, and all the time I have to attend to it is in the evening, after my day's work is done.—L. E. L., *Althouse, Oregon.*

FLOWERS IN MICHIGAN.

JAMES VICK:—I have for some time been thinking that I would write you of my experience with flowers last year.

Cobaea scandens was a perfect success. I planted the seeds in a box of mellow earth in the house, and the first of June, when the plants were about three inches high, transplanted two of them to the northeast corner of the piazza, which is on the north side of the house. They grew very luxuriantly until killed by the frost in the early part of October; at that time they had grown up and along the piazza, and to and along the eaves of the house, a distance of forty feet. The vine was so beautiful, and such a curiosity, when hanging full of bell-shaped flowers, shaded from a light green to a dark purple, that even men from the country, who seldom appear interested in such matters, would slacken the pace of their teams and gaze at it while passing. It was the wonder and admiration of all who saw it, and I was often asked what it was and where I obtained it.

My Morning Glories were fine. They grew twenty-four feet in height, and some of their leaves measured seven and one-half inches across.

I was perfectly delighted with my Pansies. They gave me a variety of blossoms, and in great abundance. I gave to my friends, besides having a large supply for myself.

Next summer I intend to have a bed of Verbenas. Shall I make it where they will get the sun all day or only part of the day, and will they do better in very rich soil?

I have been quite successful with my house-plants this winter, never being entirely without blossoms. I have no bay window, but two east and two south windows, which the plants occupy. I keep a fire in the room adjoining, but none in the room with the plants. I have a Fuchsia that was one year old last September, and is five feet in height, hanging full of buds and blossoms. The most singular thing about it is, that in the early part of the winter I broke the stalk about eighteen inches from the top, so that it hung only by a portion of the bark, and I supposed the beauty of the plant was spoiled. It occurred to me that I might mend it. I took some grafting wax and wrapped around the place where broken, fastening the stalk together. The top ceased growing for some time, and dropped some of its leaves, but has since grown and blossomed profusely. The wax still remains, but has cracked, and it looks underneath as if a large knot was forming.

The Heliotrope has had a few blossoms. At first it dropped its leaves, but now looks thrifty and green, but has no flowers.

My Sweet Alyssum does not please me. It looks thrifty, but the blossoms are small, and seem to blast. Please give me some information.

Your excellent MAGAZINE I enjoy very much. It first came to me on Christmas, a year ago, and I thought it a luxury I might do without. I now begin to consider it a necessity, as the information it contains exceeds that which I can obtain from any other source. The plates are beautiful. The group of Roses in the January number surpasses all others. The plates you have given us this year are handsomer than those of last year. If they continue to improve, they will be most delightful.—Mrs. D. E. K., *Ann Arbor, Mich.*

Verbenas like a rich soil, well drained, a full exposure to the sun and a full supply of water.

The Heliotrope, now it has become thrifty, will soon commence to bloom. Do not let it become dry, nor yet overwater it.

The Sweet Alyssum will probably do better if kept in a cooler place. When this plant is in the open grounds, the flowers are not as large in mid-summer, and especially in a dry time, as in the cooler and moister season of early autumn. It requires time and experience to secure the exact conditions under which even the more hardy flowering plants succeed best in the house. When this is once ascertained, other plants requiring nearly the same treatment can be added. It is better to acquire skill in rearing one kind of plant before attempting many.

COARSE FLOWERS.

Some of your readers have called our notice to several kinds of small flowers, and spoken well of their value for small bouquets and for other purposes. I have nothing to say against their favorites, but I do wish to bring to mind some of our larger and coarser flowers, that, if not delicate in the house, and not suited for the button-hole, are grand in the garden.



FOUR-O'CLOCK.

I was never before so impressed with the value of large flowers as last summer. I was riding along a road that I seldom traveled, though not many miles from my home, and on both sides of the straight walk that led to the house, about a hundred feet, were two rows of Zinnias, three feet or more in height, and covered with their large and varied-colored blossoms, forming a beautiful hedge. I had never seen a flower in that yard before; but one of the older children had invested ten cents for a package of Zinnia seeds, and the change was wonderful. If the same money and labor had been invested in something fine and delicate the result would have been unsatisfactory, if not a failure, and the children would have been discouraged. Now they are pleased and proud, and calculating on great things the coming summer.

I am glad you have represented in the MAGAZINE that noble flower, the Hollyhock. Speak a good word for the Petunia, too, for that is the people's and the children's flower. Another good thing is the Four-o'clock. It makes a very good clump, or even a hedge or screen.

Martynia, a kind of half-running, strong plant, with large, sweet-scented flowers, I very much like in proper places, and always have a bed in my garden, and always hope to have.

The large-growing Evening Primroses are quite interesting, opening their large, gay flowers about the time of the setting sun, and so suddenly as to surprise one.

The large-flowering Malope, crimson and white, I have usually grown, and with satisfaction. It is an improved Mallow, or Cheese, of

our childish days. The large Scabiosa, or Mourning Bride, is also an old and very interesting flower to me.

The flowers I have mentioned are all an-



SCABIOSA.

nuals, and may be grown by any child. No hot-beds or pots, or petting of any kind is necessary. The seed may be sown just where the flowers are to bloom, or all may be planted in a little bed, and then transplanted to their proper places when quite small. I could mention many others, but perhaps this will be enough for the present, and as many as any beginner should commence with. I like your advice to new amateurs, not to try too much, but to do a little, and do that little well. I will say, that



DOUBLE ZINNIA.

these large flowers, though not suitable for small floral work, are just the things for large bouquets and floral ornaments.—MAY.

FRAGRANCE.

It has been found, on a comparison of all the members of the vegetable kingdom, that plants with white blossoms have a larger proportion of odoriferous species than any others. Next in order comes red, then yellow and blue, and lastly orange and brown, which are the least available to the perfumer, and, indeed, often give a disagreeable odor. And this order of color and fragrance is also the order of the seasons. The flowers of spring are white and highly fragrant; those of summer are red and yellow, but less fragrant: while those of autumn and winter exhibit the darker hues of maturity and decay, and lose the freshness and perfume of the early year. Of the natural families of plants the Lily tribe comes first in point of fragrance, then the Roses, then the Primroses, and lastly the Campanulas or bell-flowers.

In warm countries the flowers are more highly colored, but in temperate countries are most odoriferous, Europe having a larger proportion of sweet-smelling species than either Asia or Africa. So volatile, however, is the odoriferous principle, that it varies in strength and delicacy according to soil and climate; so that the same fragrant flower when grown in different situations exhibits different degrees of perfume. The Lavender and Peppermint of Surrey are far superior to those grown in France, while the Violet loses a large portion of its scent among the Orange and Mignonette gardens of Nice, and grows sweeter as we ascend towards the slopes of the Alps.

Sweet smelling flowers, as a class, are found in greatest abundance in mountain regions. A large proportion of the plants growing in the high pasturages of the Alps are possessed of aromatic as well as medicinal properties, and I know nothing more delightful than, amid the pure, exhilarating atmosphere and the boundless prospects of those lofty spots, to gaze upon the brilliant profusion of blue, crimson and golden blossoms that carpet the ground, and to inhale their exquisite fragrance. On the mountains of Scotland there are several odorous plants—such as the Alpine Forget-me-not,—blooming amid mists and clouds on the highest summits, and breathing from its lovely blue flowers a rich perfume. On the Andes is the Peruvian Heliotrope, whose purple eyes turn ever towards the sun, and give out an odor so sweet and ravishing that the Indians regard it as a mystic spell that opens to them the gates of the spirit world. In the highest zone of the Peak of Teneriffe, far above the clouds, amid the fierce droughts and unmitigated glare of that arid region, there grows a wonderful bush—found nowhere else in the world—a species of broom,

called by the natives Retarna. It is a dull, dingy looking plant in autumn; harmonizing with the dreary desolation around; but in the spring it bursts out into a rich profusion of milk-white blossoms, and fills all the atmosphere with its delicious odor. Bee-hives are brought up to it by the peasants from the valleys, and then for a few weeks the bees revel on its nectar, which yields a highly-prized and fragrant honey.—M. H. M., *Charleston, S. C.*

OLEANDER.—ENGLISH IVY.

An Oleander, which I have, behaves very strangely. The cutting from which it grew was taken from a plant bearing fragrant pink flowers, and which I have had some years; the young one is in blossom for the first time. The longest branch has a white flower and buds, and the second branch in size has a cluster of deep pink flowers and buds. The fragrance is very faint, if perceptible at all.

J. L., of Illinois, asks in the February number if the English Ivy will bear freezing without injury to the foliage, and says she has never seen it growing in Illinois. What an amount of pleasure the people of that State have in store for them! For many years I have cultivated it as a house plant, and it will bear a heat of eighty degrees and grow finely, if it only has soil and water enough. Many persons have shown me their pots of Ivy, and complained that they could not make it grow; and nothing could grow under such treatment. It is kept in a pot not much larger than a thumb-pot, with no saucer to catch the water, (if it should get any,) and the pot only half full of poor soil, as dry as ashes, and hard as a brick.

For several years I did not believe the Ivy would grow out of doors in this vicinity; but it certainly does, and I have seen several fine specimens growing on buildings in Boston and suburbs. I have had several roots of it live out this winter, and we have had a remarkably disagreeable winter. Anything that will grow in Boston will grow anywhere in the same latitude, east or west; so the houses in Illinois might be covered with it in a few years, if the owners wished. I think it grows better on the east side of a house, but it will grow also on the west side. The color sinks to a dull, dark green every winter, but brightens up in the spring. I know of no plant that will bear such extremes of heat and cold, and that grows so easily. The more water it has, without flooding, in a warm room, the faster it grows.

In the March number of the MONTHLY, Mrs. E. B., of Sheridan, Oregon, writes, "What a pity there are so few evergreen vines." If her Dahlias, and other bulbs which are too tender

to bear our winters here are hardy there, no doubt she would be pleased to find the English Ivy as hardy there as it is here. I take a great interest in the correspondence from parts of the Union where everything is so different from what it is here.—S. D. F.

Our correspondent's conclusion that "anything that will grow in Boston will grow anywhere in the same latitude, east or west," is not admissible, for it is not true, as is well known. There are worse places in the country than Boston, on some accounts. It will probably be a long time before the houses in many parts of Illinois are covered with English Ivy.

THE DIANTHUS FOR THE HOUSE.

I noticed a question in the March number of the MAGAZINE, in regard to the flowering of Pinks in the house. I once had some very fine plants of *Dianthus Chinensis Heddewigii*, and after they had bloomed profusely and the seed ripened, I gathered some from the choicest blossoming plants and sowed in a dry place, so as to have nice plants for this spring. I gave them no further attention than to see that they did not suffer from weeds or for want of water. When I covered them, in November, I thought I would take one into the house, as an experiment; so I potted it. It was then about three inches high, and about the holidays one blossom came out. It proved to be *D. laciniatus rosea flore-pleno*. The first and second blossoms, three and four inches across, remained in blossom from four to six weeks.

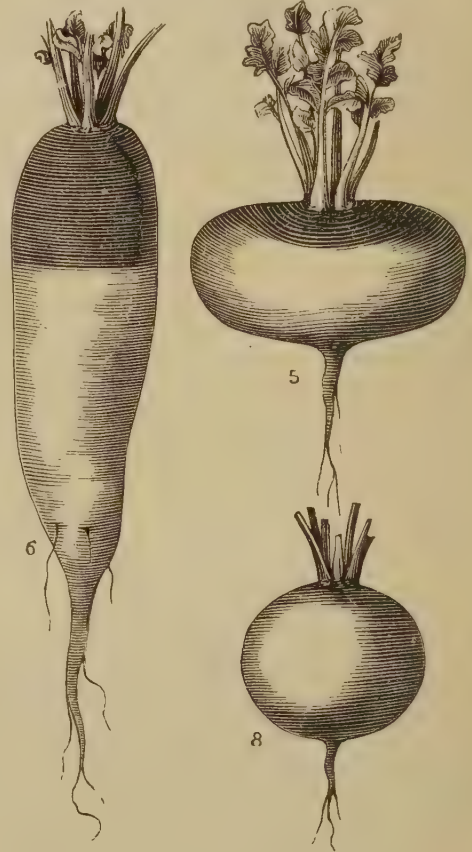
As soon as the blossoms begin to wither I cut them off, being careful to cut the old flower only, as I usually find another will spring out by the side of every flower. I have not had less than two or four blossoms at a time, and now there are nine large, full blossoms, having opened at different times, and three buds are bursting, while still others are growing and will be in bloom before the others all wither. Two of the present blossoms are three inches across, and none are less than an inch and a half. Of course I give it plenty of water, and all the nourishment it requires to keep it looking healthy and growing vigorously. I shall continue to experiment with it, and if you care to know the results may tell you further about it.

Are the Ayrshire Roses double and hardy? Are the Magnolia trees hardy, particularly the *Soulangeana* and the Cucumber Magnolia?—MRS. H. L., *Atlantic, Iowa*.

Some of the Ayrshire Roses are double, Bennett's Seedling, a white variety, being one of the most double ones. Some of them are semi-double, and of these the "Queen of Ayrshire," dark purplish crimson, is one of the best. Some are single. They are hardy in this locality, but we should doubt their perfect hardiness in Iowa. The Cucumber tree, *Magnolia acuminata*, and the variety *soulangeana* are both hardy here—but possibly not in your State.

TURNIP CULTURE.

The Turnip is a root of much more value to the world than it is thought to be by most people. The English farmer has proper realization of its value, at least I judge so by the immense quantity grown by almost every farmer, and they certainly have no delicacy in expressing their opinion on the subject. A few years ago, when traveling in the County of Norfolk, I met a jolly farmer on horseback, or, on a "bit of a cob," as he expressed it, who was riding from one field to another, directing the men in their labors. Being rather surprised at the large



5. STRAP-LEAVED RED-TOP. 6. RED TANKARD.
8. ORANGE JELLY.

quantity of Turnips, I expressed my feelings pretty freely, when the old gentleman remarked, "The Turnip, sir, is the salvation of England; without Turnips we should have no sheep, and without sheep no manure, and without manure no crops. The Turnip does more to sustain the fertility of our soils than any crop we grow. It is the farmer's sheet-anchor, and any English farmer would hardly be thought sane, who should neglect this crop. He certainly would soon impoverish his land, and himself, and his landlord." This, as I now recollect it, was about the remark made to me by, no doubt, a good and thrifty English farmer, and I found

that something like this feeling was general among all Englishmen.

I am quite sure that our warm, dry climate will never be as reliable for the Turnip as England, where there is so much moist weather, because, when a drouth sets in about the time the young plants get above the ground, it goes hard with them, and we look and watch them as they disappear, and pray for rain. However, when the weather is any way tolerable, I have grown very heavy crops; indeed, I never saw better anywhere.

I did not, however, design to speak of the Turnip as a farm crop, but as a part of every well-regulated vegetable garden, and there are



9. SWEDE WHITE. 10. SWEET GREEN-TOP.

few things the garden produces more healthful and pleasant to the taste than a tender, young Turnip.

Your readers doubtless know that there are two classes of Turnips, commonly known as the *English Turnip* and the *Swede Turnip*. The former is tender, light, juicy, and most generally white-fleshed; the latter is close-grained, solid, and usually yellow-fleshed. The English, in moist, favorable weather, will mature in five or six weeks, while the Swede takes pretty much the whole summer to reach maturity. It is, therefore, possible, with the English sorts, to grow two or three crops, and I have succeeded very well, once or twice, in growing seed as late as the latter part of September, in Western New York. I have sown Turnips after September 1st, and had them mature. My general plan is, however, to sow a few seeds very early in the spring, and then again in the middle or last of May, and in this way keep up a succession during the season.

The Swedes I treat exactly as Beets, sowing them in rows, and thinning out, as the plants

become large, to eight or ten inches apart. The Swedes are far the best for winter use, as they will keep, either buried or in a cold cellar, without becoming soft and pithy.

The fly is troublesome in dry weather, but I always sow enough for the fly and myself, too, and then try to beat the fly out of his share by throwing ashes or dust in his face. If I do not succeed in putting his eyes out, I make his food pretty gritty, and then he will be very likely to leave, in search of a pleasanter dinner. The more soot among the ashes the better.

For garden use I sow seed in shallow drills, twelve inches apart—just wide enough to hoe easily—and thin out the rows when hoeing.

For the earliest crop I put in one or two English varieties, of which the Strap-Leaf Purple Top is always one; and this is one of the earliest and best of Turnips, though there are others quite as early. With this, partly for variety and partly on account of its beauty and excellence, I have usually sown some Orange Jelly, a round, yellowish variety, of small, or rather medium size, the name of which expresses pretty well its color and character. It takes a week or two longer to mature than the Purple Top. There are several long varieties, formed more like a Radish than a Turnip, such as Cows' Horn, Long Red Tankard, &c.; but the latter, though very good for the field, is not of much account for the garden. Perhaps I will speak of a few other varieties in my next.

The Swede varieties I sow about the last of May or first of June, for I do not like them too large or too old, but have to sow before the hot weather of summer, to get the young plants a good start. The only two kinds I use are the White Sweet and a yellow kind with a purple top—TERRA.

DUTCH BULBS AT THE SOUTH.

MR. VICK:—One of your correspondents asks if "Bulbs do well at the South?" They grow and bloom finely, and with little care, in this latitude. Hyacinths, Snowdrops, Jonquils, Narcissus, Crocus, Daffodills, Star and Feather Hyacinths, and Tulips have all been grown in the open air for many years past in South Carolina. They generally bloom in February and March, and are followed by the purple, blue and white family of Iris.

The woods now are beautiful with the profusion of yellow Jasmine and Violets. The Wisteria is in bloom in the gardens, and Roses are in bud. I send you a few Jasmine flowers—merely for their fragrance. I wish you could see them in their graceful beauty, twining over nearly every tree and bush. Pansies are blooming profusely.—M. H. M., *Charleston Co., S. C.*



THE IRIS GARDENS OF JAPAN.

A correspondent of the *Journal of Horticulture* describes a visit to the Iris Gardens at Hori Kiri. He had been at Yokohama for some time before learning of their existence, the native nurserymen being inclined to secrecy on the subject. Having obtained the necessary information, however, he started on the journey, and when nearing the place "noticed several gardens on the right cropped with Pæonies, Lilies, and other flowering plants grown for the Yeddo market. We enter a garden of about one acre in extent, which again reminds me very much of home, and get into a conversation with a man who is busy cutting Lily blooms. I ask him if he is the proprietor of the ground; he answers, 'Yes,—that is, joint proprietor with three others.' Only fancy how delighted WORDSWORTH would have been with Japan, for here every cultivated rood must of a truth maintain its man. I look inside a farm-house door, inquiring the way to a neighboring Lily grower's house. There stands the master of the house, *sans* hitoyemon (loose coat,) *sans* gobi (girdle,) *sans* everything save a loin-cloth, high busy cleaning rice. He does not seem to know what we want, but his little daughter does, and after picking up her brother, nearly as big as herself, and getting him safely on her back, she volunteers to show us the way. We make a few more calls and then again start for our destination, now meeting more and more travelers returning with splendid Iris blooms in their hands, which in a measure prepare me for a grand sight.

Buddhist priests especially appear to take a lively interest in this plant, judging from the numbers I met, doubtless because it plays an important part in the decoration of their shrines. At last we arrive at the gardens, and then we catch a full view of Iris in all her virgin glory, her head bright with rainbow hues as in classic legend of old. I had expected to see a grand sight, but I was completely astounded with that which now met my eyes. Thousands and thousands of plants are arranged in sunken

beds, flooded during the summer months with pure fresh water, and cut out with due regard to effect, with grassy raised paths between, and hedged in by grass-clad knolls, on the top of which pretty little tea houses are built, and up and down the sides of which the Yeddo children tumble in unrestricted glee, their limbs unfettered by tight-fitting garments, and their knees in no danger of poking through their trousers.

Of course gorgeous bedding-out is no novelty to an Englishman who has seen the London parks, but this sight in early June was so thoroughly unique, so absolutely astounding, that I could only look on in wonder and amazement. The owner of the premises comes to us dressed in extremely unpretending style, and begins to show us around. In answer to my inquiries about the seed he informs me in true nurseryman-like style that he only saves seed of the very best varieties, bringing to my mind the advertisements of those painstaking seed firms at home who neither adulterate seed nor ever allow semi-double flowers to seed in some cases. Semi-double Irids there are here in abundance, some looking more like immense double Petunias impaled on long stalks than anything else, and many others having six immense outer petals, forming an almost perfect circle, with an inner row beautifully reticulated and shaded with a great variety of colors, from light rose and lavender to the deepest crimson and cobalt.

Our host begs us to take some refreshment, and after drinking tea and eating cakes *ad libitum* we feel refreshed and pursue our examination of the place. Nearly two hundred varieties of Iris are in those beds, and with one or two trifling exceptions these are kept true to name, and arranged so that the colors harmonize most beautifully. Hundreds of visitors are here, some drinking tea, some raki, but none either mis-behaving themselves in any way or producing black bottles and sickening parcels of sandwiches with the intention of littering the grounds with sundry greasy papers."

ENGLISH PARKS AND GARDENS.

Resuming the subject of my last letter, I may observe that some owners of the "broad acres" show a decided leaning toward the artistic in the arrangement and furnishing of their parks. They have doubtless studied the product of ancient Greek and Roman art, and manifest the same, not only by a liberal display of choice

Returning to the larger gardens, we noticed another prevailing feature of taste and liberality in the immense tracts of flower beds. The two styles of bedding most generally in use are the geometric and carpet patterns; the former has reference merely to the outline form of the beds, as may be seen by our illustration, leaving the space thus laid out to be filled with any kind of

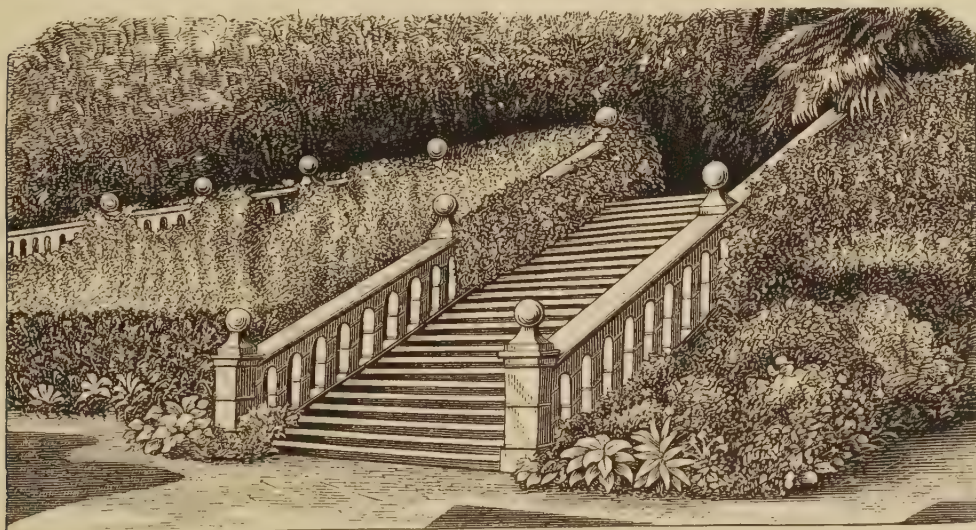


GEOMETRIC BORDER.

marble statuary, to be found in all suitable places through their grounds, but also in the classic designs apparent in the construction of the different plant houses, aviaries, palisades, or terraced walks—a feature, by the way, that prevails to a large extent in most English gardens of any pretensions. It is an excellent plan, and, we think, far superior to our American method of leveling every foot of ground down to a plane surface. City lots even, of comparatively small compass, are made to look larger in this way—a terrace walk or two of different grades, with, perhaps, a few groups of low shrubbery in the background, through the openings of which may be seen other shrubbery or climbers, effectually screening the fence, so that we really do not see the narrow limits of the lot, but are beguiled into the idea of quite a stretch of picturesque grounds beyond.

choice plants at the owner's disposal. The carpet-pattern, however, is one, two or three geometric forms continuously repeated, each form being completely covered with plants of one particular color, care being taken to have the same forms always filled with the same colors throughout the entire length of the bedding, which often extends half a mile or more. The plants chosen for such work are dwarf bedders—sometimes selected for the flowers and sometimes for their foliage. The whole mass is kept clipped to a uniform height, and when viewed from an eminence has the appearance of an immense piece of mosaic work, exhibiting alike skill, artistic taste and munificence.

Of course, these elegant surroundings of the family mansion are not often the outgrowth of one man's energy, but almost always they are the accumulated wealth and taste of generations,



TERRACE IN HADDON HALL GROUNDS.

the original design being rigorously carried out through the great reverence an Englishman has for his ancestry.

A stroll through the grounds of Haddon Hall, near Derby, gave us abundant illustrations of these thoughts, and we could not but reflect how many of England's beauties and noble sires had walked these paths, with all their human ambitions, loves and hates, and had passed away, leaving behind these stable relics as ideals of a beautiful home.

Many of the adornments of these park lands are quite interesting of themselves, and might be advantageously used on much smaller



WATER PAVILION.

grounds; take, for instance, the water pavilion, of which we give an illustration, how well adapted such a structure would be for any gentleman's grounds that have a frontage on some of our beautiful American rivers, streams or lakes, serving the double purpose of a summer-house and boat landing. What a nice place, too, the vicinity of such a retreat would make for the growth of water plants—Water Lilies, white, yellow and pink; Iris, blue and purple; Arrow Heads, with spikes of white flowers, and Cat Tails, with their graceful tufts of brown.

Such places, I noticed, had their usual share of aquatic animals and insects—snails, water bugs, dragon-flies, and the like, not forgetting the birds, for these lovely nooks would offer tempting inducements to the rollicking Marsh Wren, Swamp Sparrow and noisy Redwing to settle down in life and go to housekeeping. And I am inclined to think, if we Americans could only let up a little on money making and incline a little more to pleasure-taking in this healthful, intelligent way, how much more we might enjoy of this beautiful world in the short span of three score years and ten.—WALTON.

FLORAL PHENOMENA.

The traveler and naturalist, ADOARDO BECCARI, in his travels through the East Indian Archipeligo, has discovered a plant belonging to the race of *Amorphophallus*, which bears a flower measuring as much as the largest of the *Rafflesia Arnolei* and *Victoria Regia*; its width is given at two feet six inches, and its length at five feet two inches. The lucky finder has sent tubers of this plant to the well known plant lover, MARQUIS CORSI SALVIATI, residing at Florence. Previously, the discoverer named it *Amorphophallus Titanum*. It was found in the woods on the island of Sumatra.

In the garden of Mr. W. RENAUD, at Amsterdam, lately bloomed a Japan *Lilium speciosum rubrum* from which nine flowers unfolded in succession. The first flower was red, the next white, and the bulb gave five red and four pure white flowers; all were of good form, and the red flowers were like those of the common sort. Two or three years ago the bulb was taken up and re-planted, and bloomed in 1877 in the normal manner with five red flowers, without the least variation. The question is which is the type, the white, or the red? or is *punctatum*, which occupies the intermediate position between the two, the parent of both? —E. H., *Le Roy, N. Y.*

FOREIGN FLOWERS.

Lovers of flowers are often censured because they prefer flowers of other countries in preference to natives equally beautiful. This, however, is natural, and not confined to any country or clime. We get tired of things often seen, and a little labor and expense in obtaining an object by no means lessens our appreciation of its value, or the joy of possession. Mrs. BRASSEY, in speaking of Rio de Janeiro, says that she had more than once a bouquet of common Stocks given to her as a grand present, while Orchids, Gardenias, Stephanotis, large purple, pink and white Azaleas, Orange-blossoms, and Roses, were growing around in unheeded profusion.

FASHION IN FLOWERS.—Fashion in flowers is about as unreasonable and ridiculous as fashion in anything else. For long years florists strove to make the Dahlia perfectly double, and succeeded. The least sign of a yellow center would condemn a flower otherwise excellent. Now, the florists of Europe are growing and puffing and naming single Dahlias by the dozen. Soon, we suppose, the fashion will be for single Roses and Hollyhocks, and Crab Apples and wild Plums. It may be well enough to copy the ancient in our houses and furniture, but, we say, hands off our flowers and plants.



PLEASANT GOSSIP.

STRIKING ROSE CUTTINGS.

I want you to tell me, through your MAGAZINE, the way to root cuttings of choice Tea Roses. I have tried repeatedly to propagate from my Marechal Niel, but have failed as often. When I saw in your paper the process recommended of using two pots, the smaller in the larger, to contain water, I was sure of success; but it was not a success for Roses, although everything else I put in grew.—S. E. S., *Berea, O.*

There is no difficulty in striking cuttings of the Bourbon, Noisette and Tea Roses without any expensive apparatus. They will readily root in the window of a sitting room, if placed around the sides of a pot of sand kept constantly damp. In order to maintain a moist air about the cuttings, and thus prevent much evaporation before roots are formed, it is a great advantage to cover them with a glass. This can be done by inverting a common tumbler over the cuttings, resting it on the soil just inside the rim of the pot; what is better than a tumbler is a bell-glass, under which one, or several, small pots may be placed, according to their size. These bell-glasses are called *cloches* by the French, and some English writers affect this word, but the English name is far more expressive. Bell-glasses can be procured cheap



at the glass manufactories, and, as they are very durable with ordinary care, it is advisable to procure them when opportunity presents; when, however, they are not at hand, the clever amateur will adapt the tumbler, the broken fruit-jar, the cracked fish-globe, or other piece of glassware, to the service.

The most favorable condition of the wood is important to be considered in making the cuttings; this exists at the time the shoot has finished its growth or just completed its flower-



TWO-BUD CUTTING.



ONE-BUD CUTTING.

ing. It was formerly supposed necessary to make all cuttings at the base of a bud, and many gardeners still follow this practice, but the best propagators now disregard this idea and make the cutting just above the bud; in this way every bud supplies a cutting, so that twice as many cuttings can be made from the same amount of wood, by the new method, and they are found to strike root quite as freely.

The Hybrid Perpetual and Moss Roses are very much more difficult to strike, and they cannot be propagated successfully without bottom heat. To this end the florist and the nurseryman construct propagating houses, with beds heated by pipes with hot water flowing through them, to keep up a steady heat to encourage the production of roots in advance of the growth of the stem. In beds thus artificially heated are propagated nearly all kinds of plants, even cuttings that strike root easily without bottom heat will send out their roots much quicker in such a place. In a small way this method is imitated by the use of a frame, similar to a Wardian case, but provided with a shallow tank of water underneath, to be heated

by means of a lamp. Such an apparatus is interesting and useful to one wishing to raise plants more largely than would be possible with pots and bell-glasses.

A ROSE INSECT.

MR. JAMES VICK :—I inclose a bit of the stem of a Rose bush covered with a sort of white scale. I have two large bushes (hardy June Roses, both white) completely covered with the scale. Can you tell me, in the MAGAZINE, what it is, and what I can do to save the bushes and prevent spreading? Said bushes were nearly denuded of leaves last summer by small, green slugs. —CERES, Naples, Ill

With this communication we received a bit of Rose twig, almost entirely covered with what appeared to the naked eye very much like a white mold, but which, under a magnifying glass, looked like some kind of scale insect. As it was quite new to us we forwarded the specimen to Mr. GEO. DIMMOCK, entomologist, Cambridge, Mass., who has kindly favored us with the following interesting reply :

"The coccus you sent was one of which but little is said in American books. It is *Diaspis rosæ*. It is also called *Aspidiotus rosæ* in many works—and may be termed the *Rose bark-louse*. The larger scales are those of the female, while the smaller ones, with tricarinate white secretion behind, are the males. They are well described in the Annals of the French Entomological Society, by Signoret. He says they are sometimes so abundant that the Rose bushes seem wholly white, and covered with a moist layer. They are very briefly mentioned in early reports of Harris, and of Fitch, as found at Wheeling, Va. When these species of *Aspidiotus*, or *Diaspis*, get too numerous—as this *A. rosæ* rarely does, as far as I know, in America, on account of its numerous parasites and insect enemies—the remedies recommended by EMILY A. SMITH, in a late issue of the *American Naturalist*, for the Maple tree bark-louse, may prove very effective. When the insects are very young she recommends a wash of soap-suds, applied 'by attaching a wire bag to a common sprinkling hose, filling the bag with soft-soap and turning on the water, a soap-suds was formed which would kill the insects.' Any very mild alkali will kill them when very young, as they are then extremely delicate. On a small scale, the Rose bushes might be sprayed with an atomizer in which was dissolved a very little of any mild alkali or soap. All scale insects are readily disposed of if taken when just hatched. The time of hatching can only be discovered by observation, as it varies for each species and according to the different conditions under which the infected plant is placed."

OXALIS FLORIBUNDA, ETC.

MR. VICK :—Will you please tell me how to treat *Oxalis floribunda*? I received three tubers a short time since. Please tell me what size of pot I ought to have planted them in; also, how to treat them when they are done blooming.

Last fall I procured two *Polyanthus Narcissus*—one *Gloriosum* and one *Double Roman*—planted them in same soil and gave same treatment. *Gloriosum* flowered gloriously, but the leaves of *Double Roman* grew twenty-eight inches high and never a flower at all. Now, what do you think was the cause?

Are Roman Hyacinths of any further use after blossoming in the house?

I have a *Calla* which I have had two years and it has never bloomed. Soon as a new leaf comes one of the old ones commences to wither at the tip, and soon there is nothing left of it; so that my *Calla* has never more than three leaves. It is in an eight-inch pot. Will you please answer these questions through your MAGAZINE. —MRS. J. J., Pittsburg, Pa.

Oxalis floribunda is a plant exacting but little care in its management, and repaying with abundant bloom whatever it receives. It is a perennial plant and can be transplanted at any season of the year, and is always ready to commence a new growth. A single tuber may be potted in a five-inch pot and it will soon require all the space. The plant blooms very profusely and for a long time, although, after a while, the foliage and the flowers come smaller and the bloom decreases in amount. We once kept a plant along, by good nursing, in fair blooming condition, for a year and a half, and then it accidentally met with a fall by which the pot was broken in pieces. If this *Oxalis* is employed as a winter-flowering plant, when the flowers dwindle and are few in number, in the late spring, we cut away the foliage which, also, by this time, begins to look shabby, turn the plant out of the pot, shake out the roots, removing the young tubers, and repot the old plant in fresh soil. After this, we stand it out on the ground for the summer. Here it rests for a while, but gradually begins to make a new set of foliage, and, when wanted to take in in the fall, is in fine blooming condition.

As to the *Double Roman Narcissus*, it is impossible to say why, in the case of a single bulb, it did not flower. Such an instance is an exception for which, of course, there is a reason, but what that is, without an intimate knowledge of the particular bulb, it is impossible to tell.

Roman Hyacinths, if bloomed in pots of soil, not in water, may be dried off when the foliage turns yellow and laid away until fall, and then repotted. The second bloom will not, however, be as good as the first, and, like those of other varieties, the bulbs of the Roman Hyacinth will gradually deteriorate.

We do not know the facts, but, probably, more light, more ventilation, and perhaps less heat would be beneficial to your *Calla*.

PEA AND BEAN WEEVIL.

MR. JAMES VICK:—Herewith enclosed find four Beans, evidently in possession of some of our enemies. Please name the insect, &c., in any convenient number of your admired MAGAZINE.—B. N. HYDE, Pottsville, Pa.

Most of our readers, no doubt, have seen "buggy peas," with a little insect peeping out of a hole in each Pea, and, if the weather was warm, crawling about and showing a great deal of activity. This is the Pea Weevil, known to entomologists as *Bruchus Pisi*. This weevil is a native of the United States, and was first observed in Pennsylvania. From that State they seem to have spread over all the Middle States, but do not make much progress in those more northerly, such as Maine and New Hampshire, and are not abundant in the northern part of New York. They are becoming plenty in the south of Europe, but have not reached northern Europe, and seem to dislike a cold climate. So



PEA WEEVIL.

numerous and annoying have they become that Pea-growing for seed has been abandoned in a great many sections, and we have to depend upon a few northern sections, Canada and Europe for our seed Peas.

In former times these insects made out to live on the seeds of the native plants, but, keeping pace with the progress of culture and refinement, now dine on our nice garden Peas, and if these are not to be had, will do the best they can on our common field Peas.

When the Pea is tender, the weevil deposits its eggs in the pod, making a little puncture for the purpose, and only laying one in a place. The eggs soon hatch a grub, which makes its way into the Pea, and only one will be found in each, and very often every Pea in a pod will contain a grub. Here the grub continues to live and feed, and gets of good size about the time the Pea is ripe. It then bores a hole from the center to the surface of the Pea, leaving only the outside covering or skin. In the spring it casts its skin, becomes a beetle, and leaves the Pea to renew the work of destruction. Often this is not done until long after the Peas are planted.

The Bean Weevil is a different species, and somewhat different in its habits. It is, perhaps, *Bruchus granarius*. The first time we saw this insect was in a quantity of Red Wax Beans, from Pennsylvania. It is more destructive to the seed than the Pea Weevil, because it almost entirely destroys the Bean, while the Pea Wee-

vil usually leaves the germ untouched; it also makes many holes, while the Pea bug makes but one. This weevil has a bad habit of not only passing from one Bean to another, but even making its way through a bag or sack and entering another that is standing near. Neither of these faults can be charged to the



BEAN WEEVIL.

Pea Weevil, which remains quietly in the Pea it has selected for its home.

If Peas are sown very late in the spring, they usually escape the weevil, but, in a warm climate, often suffer from mildew. Let us hope this troublesome insect, like many others, will have its day and pass away. In the meantime, no one should plant live bugs. An ounce or two of camphor placed in a barrel, or any tight vessel, will kill the bugs. This can be done when stored away after thrashing, or in the spring, a week before sowing. A few days of this treatment will be sufficient.

Our drawings were taken from the best specimens we could procure at this season, and show the insects magnified. The straight line near each of them is the measure of their extreme length, natural size.

CAMELLIAS NOT BLOOMING.

JAMES VICK:—Will you please say in some number of your MAGAZINE what the trouble is with my Camellias? The buds do not drop off, but, just when they ought to expand and reward one for a year of care and patience, they become apparently paralyzed and make no further effort, but gradually turn brown and decay. Others will expand a layer or two of the outside petals, but the center petals will not unfold, remaining stationary until they decay. I keep the air damp and think I don't let the roots lack for water. Hence, their ingratitude staggers me.

Can you also say what ails my Rex Begonias? For a month or two the leaves have shrivelled up as though they were burned. Even young and vigorous leaves will do so. I do not think it is from lack of water, as I watch them closely, and they do not go through the stages of wilting, as they would if suffering for water. Does the Rex Begonia have a season of rest and lose its leaves in this manner?

My Celery suffered in the same way, last summer, as described by a correspondent. Brown blotches would come on the leaves and spread until whole branches were dead. My soil is a heavy clay and always moist, so I don't think it could be drouth.—R. E. W., Kensington, Ill.

The trouble with these Camellias is, they have been kept at too high a temperature and given too much water. An excess of heat and water at the blooming season is sure to affect them in this way. The temperature should be kept as even as possible, and not to exceed fifty degrees. At this low temperature, with a moist air, com-

paratively little water will be necessary. We should suspect the Begonias to be infested with red spider, and, if this be the case, they should be treated properly to destroy them. Syringe or spray the leaves with water several times a day, and follow up this treatment for a number of days, or until the insects are destroyed. The pots can be placed in the sink and turned on their sides while sprinkling, so that the soil may not become too wet. A daily syringing should not afterwards be neglected, nor provision for sufficient moisture in the atmosphere. The difficulty with the Celery, according to a communication in this number, is the same little insect.

FUCHSIAS, GARDENIAS, &C.

MR. VICK:—Will you be kind enough to answer a few question through your MAGAZINE?

1. I have a fine collection of Fuchsias. Some are in blossom and all are growing finely, but the leaves of some of them curl up. Will you tell me the cause?

2. What is the proper kind of soil for a Cape Jasmine? Should they be grown in pots or in the garden? Will they blossom in the summer or winter?

3. How is the proper way to grow Lantanas, Cyclamen, Primulas and Cinerarias from seed?—S. B. M., Cortland, Ill.

1. The leaves falling from the Fuchsias is probably the result of attacks from insects. Examine them closely, and if insects are discovered, treat them as they deserve.

2. The Cape Jasmine, *Gardenia florida*, thrives in a rather light, but rich, soil. It may be planted out in the garden in summer, where it will bloom freely; early in the fall it can be carefully lifted and potted and brought into the house, where it will continue to flower through the winter season.

3. There is no particular difficulty in germinating any of these seeds. A shallow box or propagating pan filled with a mixture of equal parts of sand and leaf-mold is all that is required. The soil should be moistened thoroughly and then the seed may be sown on the surface, and covered as lightly as possible with a little fine soil sifted over; the very finest seeds do not need any covering, as the lightest spraying with water will sufficiently imbed them. It is well to cover a piece of bibulous or loose-textured paper over them to exclude the light, and through which the soil may be dampened. The paper should be removed as soon as there is the slightest appearance of the young plants. Another way after sowing the seed is, to cover the box with a pane of glass, or it may be set into a close-frame; if it is a small pan it may be covered with a bell-glass. All of these devices are resorted to to secure an even humidity of temperature. A heat of seventy to seventy-five degrees is best.

SUPPORTS FOR THE CLEMATIS.

MR. VICK:—I wish you would say something about the means by which the Clematis climbs. I have three different varieties to plant this spring, and am at a loss to know what kind of supports to provide for them, as I have never seen them growing. I have read every article I can find on the subject of Clematis, but cannot get the desired information. Botanists say they support themselves by their long, twining petioles. If so, I can't see how they retain their position in the winter, after the leaves have fallen. Will they do well in a situation shaded about half of the day? It is in such a place I design setting them. The photograph of one given by your correspondent in the March number of the MAGAZINE has the appearance of climbing up a tight board wall. Information on the subject will be thankfully received.—J. L., Springfield, Ill.

The best support for the Clematis may be made of wire. It may either be fashioned by the regular wire-worker into trellis-work, and then be placed in position, or, more economically, one can, by the use of suitable nails, or staples, strain it up and fasten it for himself. Galvanized wire is the only kind suitable for such work, as it will not soon rust. The Clematis sustains itself in climbing by its clasping petioles, and although these fall with the leaf, yet the vine will be supported by its shoots which, during the season, have run through and over the supports.

It is no objection to have the Clematis in a situation where it will be shaded part of the day—in fact, for those varieties at all tender, it would be preferable to have them planted so that they would get the morning sun but be screened from it in the afternoon.

MANDEVILLEA SUAVEOLENS.

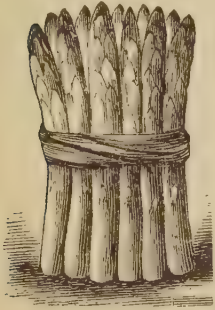
MR. VICK:—I see in your MAGAZINE so many asking you for instruction and advice, and you give it with such alacrity and patience, that I also come to you with my trouble. I have cultivated plants many years, and with good success generally, as you would know if you could see the plants in my conservatory—luxuriant of leaf and brilliant with flowers. But for several years I have had a *Mandevillea suaveolens* that will not bloom. I am very desirous to see this plant blossom, and now if you can tell me how to treat it for that effect I shall be greatly obliged. It has been in an eight-inch pot for two years, is a large plant, trained on a trellis four feet high, is pot-bound and has been resting all winter. The MAGAZINE is a little gem and I would not now be without it.—E. J. C., St. Joseph, Mo.

This pot-bound plant should be turned out and most of the soil removed, and be repotted in a larger pot, in fresh, strong soil, with a good mixture of old cow-dung. As it starts into growth give plenty of water, and occasionally a little liquid manure. Probably it will be best to give it more of a chance to run, by training it up wires. It should flower freely in July. Syringe the foliage frequently to keep down red spider. When in bloom this is a plant of great beauty, and the large, trumpet-shaped, white flowers are very fragrant.

ASPARAGUS CULTURE.

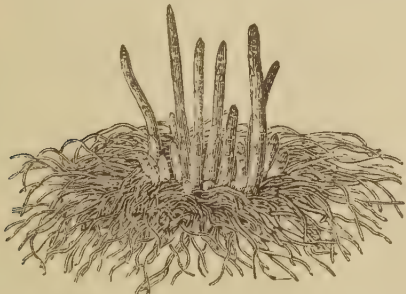
Will you please give me a little information about making an Asparagus bed? I have moved to a new place, and shall miss the old bed that furnished a good spring supply for many years. How long will an Asparagus bed last? Is it best to sow the seeds, or procure plants? Is salt a good manure for Asparagus? Is it a native of this country?—I have been told it was. Does Asparagus require a rich soil? Tell your readers all about it.—GORHAM.

If you are in haste for Asparagus, obtain two-year roots and plant at once. Make the soil deep, mellow, and as rich as possible. Don't spare the manure. The Asparagus is a salt water plant, indigenous to various parts of the coast of Europe and Asia, growing in salt marshes. It has escaped from our gardens, and is now found in some places on the American coast, and is sometimes observed in our meadows.



The plant is perennial, and grows some five feet in height, with a branching stem, fine cylindrical leaves, small greenish flowers, and red berries containing black seed. The seed may be sown either in the spring or autumn, in drills, about one inch deep, and the rows wide enough apart to admit of hoeing—about a foot. An ounce of seed is sufficient for a drill thirty feet in length.

Keep the soil mellow and free from weeds during the summer, and in the fall or succeeding spring the plants may be set out in beds, about a foot apart each way. The beds should be narrow, so as to permit of cutting to the center without stepping upon them. The plants may remain in the seed-bed until two years old, if desired. Before winter cover the transplanted



beds with about four inches of manure. A good many varieties are advertised, with but little difference. As Asparagus plants are all grown from seed, it will be seen that there is great opportunity for variation. Salt is an excellent manure for Asparagus, and an efficient assistant to the cultivator, keeping down the weeds with very little labor. When grown in large quantities for market, it is often planted

a foot apart in the rows, and the rows three feet apart, and sometimes three feet apart each way. Cut for use the third year after planting, and if the shoots appear pretty strong, a little may be cut the second year. The part used is the young shoots when about five or six inches in height, and when the bud is close and firm, and these should be cut a little below the surface, with a sloping cut. It is not best to continue the cutting late in the season, unless the shoots are very robust. Always give the bed a good dressing of manure in the fall, first removing the dead brush of the past season.

As an Asparagus bed will last longer than the maker, it should be well made, and there should be no haste in cutting. Those who do not wish the trouble and delay of growing Asparagus from seed, can obtain plants either one or two years old at a very moderate price.



Secure a good, rich, deep, mellow soil, and set the plants with the roots spread out naturally, just as a good gardener would arrange the roots of any tree or plant, and so deep that the crown will be two or three inches below the surface. In removing weeds, be careful not to injure the crowns. In the spring remove them only by hand. The roots, if procured in the spring, and in good condition, will show the buds or young shoots an inch or two in length. The engravings show a bunch of Asparagus as usually exposed for sale, a root of Asparagus with the young shoots well started, some of them almost ready for cutting, and a branch of the plant at seeding time. Some persons are in such haste that they order old plants, but two-year old roots are as large as can be transplanted to advantage.

New Wheat.—Do you know anything about the new varieties of Wheat, *Purple Strand*, and *Peoples' Friend*? I saw some sent to one of my neighbors early in the season, but moving away did not learn the result.—J. H. S.

We think these were the same kinds sent us in November 1877, by Prof. HENRY, of the Smithsonian Institute, as new varieties from Tasmania. We drilled the seed in carefully, gave good culture, and up to June the growth was very fine; but in the hot weather the heads blasted.

PIONEERING IN FLORICULTURE.

I write to thank you for the first number of the beautiful *Floral Guide* for '79, and to tell you of the lovely flowers I have been getting from you. We moved to this place a year ago the first of January. I had never taken any pleasure in cultivating flowers, but concluded I would have a nice flower yard to help improve and beautify our new home. So I went to work, laid off my garden, and planted all the flowers I could get at that time. I have added something almost every week up to the present time, and you will hardly credit it when I say my yard is the admiration of all who see it, and by far the best collection of flowers in the "city." My Hyacinths have increased wonderfully; they are the richest colors and largest blooms I ever saw. All who see them exclaim, "Oh! how beautiful!" and many beg for the "first spare bulb." They are through blooming already. The Tulips failed to bloom last year, but are budding now. My Pæony didn't bloom last spring? I have frequently been told it was too far south for them. All the rest of my flowers are doing splendidly. I have a large variety of Roses, Jasmines, Honeysuckles, Geraniums, Evergreens, and Mosses, besides Annuals too numerous to mention, and other rare plants.—MISS. W. R. P., *Mineola, Texas, March 20, 1879.*

We have frequently been informed that the Pæony does not bloom well, if at all, in the extreme Southern States. We should be pleased to hear from some one who has had extended experience and observation with it, and learn the facts concerning its growth and blooming in that section.

THE GREEN CURRANT WORM.

Will you please inform me how to use the white hellebore for the purpose of killing the green currant worm? Should it be mixed with some other substance, and if so, what? In what quantity and in what manner is it applied? We have three thousand currant bushes and they were visited by this pest last year, and I suppose it will be here again in force this spring.—MRS. M. S., *Hamilton, Ohio.*

To the same purport we read in the proceedings of the Montgomery County Horticultural Society, of Dayton, Ohio. By the way, we must congratulate this Society upon its flourishing condition, and wish it a prosperous future. Its monthly "Proceedings" indicate a lively interest, and even enthusiasm, among its members. In the March meeting of this Society,

"Mr. SILVER asked for a remedy for the currant worm.

Mr. OHMER said it appeared here last summer for the first time, but could not state what would destroy it.

Dr. WARDER said it also made its first appearance last summer in Hamilton county.

Mr. LONGSTRETH said a neighbor of his successfully fought them last summer with strong soapsuds; take them in time and persevere, and success will crown your efforts."

The currant worm, the larva of a saw-fly, (*Abraxis ribearia*), has long been a naturalized resident of this section. We are afraid that soapsuds will be a poor weapon to fight this enemy with. The only thing that has proved effective is what is called White Hellebore in the shops—it is really *Veratrum Album*. This

comes in the shape of a fine powder, and is applied with a small dredging box, in quantities sufficient to give the worms a good peppering. It is best to scatter it on when the leaves are damp, either by dew or after having sprinkled them with water. The plants must be watched and the powder applied whenever the worms appear, which will be several times during the season. The powder does not injure the fruit, and we never heard of any ill effects from its use; of course, in applying it one should guard himself from it by standing to the windward of it. It is sometimes mixed with water, and applied with a sprinkling pot or syringe, but common sentiment favors the application of it in a dry state. When once this insect has settled in a locality, there is little hope that it will ever be entirely rid of it.

WARDIAN CASE.—SUMMER TREATMENT.

Please tell me if it is necessary to move the plants—such as ferns, Begonias and Trailing Arbutus—from our Wardian case, in summer, to a prepared bed out of doors? Our Wardian case is quite fine now, and if it would do well I would like to leave it just as it is. Would the plants be too weak next winter, if kept growing all summer? The plants get air all the time, for a corner is broken off one of the top lights, leaving an opening about six inches long by three wide.—V. P., *London, Ohio.*

It is always best to replant a Wardian case in August or September, with vigorous plants that have never before been used for the purpose. Plants that have been kept in a case through one season are sure to be enfeebled, and will never do as well again as new ones. The old plants occupying the case can be kept along in it as long as one may wish, until it is necessary to replant. In order to have in readiness just the plants desired when the time comes for their use, preparations should be made in advance, and it is none too early to begin now.

HARDINESS OF THE HYDRANGEA.

MR VICK:—Will you please tell me if the *Hydrangea paniculata grandiflora* will live out of doors and survive our winters here in Maine? I believe in the cultivation of flowers, and have gained health and pleasure from it. I do not think all our energies should tend towards "something to eat," or "something to wear." One morning as I was watering my flowers, one of my neighbors came along with an ox team. He stopped his team, looked over the fence, made several inquiries about flowers, and said he had heard that Poppies were good herbs. I called his attention to my *Rubrum Lily*. He asked if it was good to eat, and when I told him it was not, that I cultivated it for its beauty, "Come Buck," and immediately he started his team along, seeming to think I was poorly employed if my labor did not bring something to eat.—J. E. C., *E. Bluehill, Me.*

We have no positive knowledge of the hardiness of *Hydrangea paniculata grandiflora* in Maine, but, judging from what we hear of it in other localities, think it may be hardy there.

HOLLAND BULBS AT THE SOUTH.

A little experience, we believe, is worth more than a great deal of theory. So, when several correspondents at the south inquired if Hardy Bulbs could be successfully grown in that section, we asked the experience of our readers on the subject. Several have kindly responded, but none so fully, and from so far south, as Mrs. S. T. RICE, of Abbeville, Louisiana, whose communication we give with pleasure.

MR. VICK :—As you have invited your southern readers to give their experience in cultivating Holland Bulbs, I give you mine. I live in the most southern portion of the State, not more than six miles, in a direct line, from the Gulf coast. The land is low, soil black, and very rich. I have very little space for cultivating flowers, and, therefore, buy only a few at a time. I have tried Crocuses and Tulips in the house and garden, and they proved a perfect failure—the Tulips never bloomed, although I cultivated them three years. Scillas do well, and increase rapidly; Narcissus do finely, they will grow and bloom even if thrown away; Hyacinths succeed here to perfection, I think. In the fall of 1873 I procured half a dozen named Hyacinths, for house culture. I had never had the care of a bulb in my life, but thought I could grow anything. I planted them in a box, and then nursed them to death. Two bulbs did not make even an effort to grow, but were contented to die underground; two put up their green leaves and then gave up; one made a very respectable spike, and the other, a double white, made two large and beautiful trusses, that almost repaid me for my sad failure with the others. When the tops dried down I searched the box, finding only one bulb, the double white, and several small bulbs from those that had decayed. I planted these the next fall, and I have never bought a Hyacinth bulb from that time to the present. Now, can you believe me when I tell you that, for several years past, I have had my little bed of Hyacinths, and every bulb, except two, were raised from those I first obtained? My neighbors say my Hyacinths bloom more beautiful every year, and I agree with them. In the fall of 1877 I had several dozen bulbs, larger, I think, than the bulbs I bought; they all made from six to fourteen fine spikes to the single bulb put down in the fall. On one I counted sixteen, on another eighteen beautiful trusses, every bell perfect. When I took the bulbs up I found they had all broken up, or parted, making many flat-looking bulbs, none very large. I planted these last fall, and this spring, for the first time, they have not bloomed to please me—the double ones making large, flat stems, with fine flowers, but few and far apart, while the single made good trusses, some fine, and nearly all having flowers with from seven to twelve petals. On one truss I counted only four single flowers, and many appeared to be perfectly double. I pulled one to pieces, and counted eighteen petals. On one, a single white, every flower came out perfectly double. Is it usual for Hyacinths to come double?

I will tell you how I cultivate my bulbs. The first of October I spade up the bed, and about the middle or last of the month I plant the bulbs. I never disturb the bed after planting. By the time the leaves put up, the bed is well covered with Phlox Drummondii, from self-sown seeds. When the Hyacinths are in full-bloom the Phlox commences to bloom, and continues one blaze of beauty up to the middle of July. If the bed is spaded earlier, the Phlox will be blooming well when the Hyacinths commence. When the Phlox dies down, I take up the bulbs, and, after drying them a few days in the shade, hang up in bags. I have tried leaving them in the ground, and find they do not do as well. Nearly

every year I gather my first bouquet of Hyacinths the 10th of February.

In the January number of the MAGAZINE, a lady asks, "What shall we do with the 'wee sma' house plants?" and believes you cannot answer. Now, I wish to ask a question of more importance, and one far more difficult to answer. What can be done with the husbands who hate flowers, and will not permit their flower-loving wives to have a single plant? If you can answer that satisfactorily, you will confer a lasting obligation on many of your readers.

If our correspondent would plant Hyacinths for the house quite early in the autumn, and keep them for a month or two in the coolest possible place, we think she would succeed. We would pot the bulbs and sink the pots in the ground, removing them to the house in early winter. Those, however, who can gather Hyacinths in the open ground in the month of February, are not so anxious for flowers in the house as we poor folks at the north, where the ground, this season, was covered with snow on the 5th of April.

That last question is a little too hard for us. We have no fear of the little ones, and would like to be around, say thirty years from now, when the children of to-day are men and women, just to see what a nice world it will be. The old folks are hard to manage, not that ignorance would be a serious obstacle, were it not for the conceit with which it is usually accompanied.

PARTRIDGE VINE—TRAILING ARBUTUS.

MR. VICK :—A correspondent of your excellent MAGAZINE asks as to the cultivation of the Partridge Vine, or Checker Berry. Though, as you reply, it will not endure garden cultivation, it can be grown in the fernery or Wardian case with success. I have now in mine a little knoll of the vine growing finely and just in bloom, and hope to see the little scarlet twin-berries perfected. The Trailing Arbutus I have also tried, but, coming by mail from the mountains of Virginia, as it did, it was probably too much dried to give success. Please tell me if it can be grown in the fernery, and if it will bloom there?—MRS. J. P. S., *Des Moines, Iowa*.

The Trailing Arbutus, if carefully removed from its native place, early in spring, to the Wardian case will bloom freely, but the plant will have but a short existence after. The only chance to bring it into a state of semi-cultivation would be in what our English cousins call the wild-garden—that is, to plant it among shrubs, so that it may be partially shaded, and safe from disturbance by spade or other tool.

Caladium Leaves.—I have been somewhat amused at the immense Caladium (Colocasia) leaves that some of your correspondents have mentioned. I don't measure any under four feet. I have a record of one in 1877 that measured fifty-two by forty-three inches.—M. W., *Kansas City, Mo.*

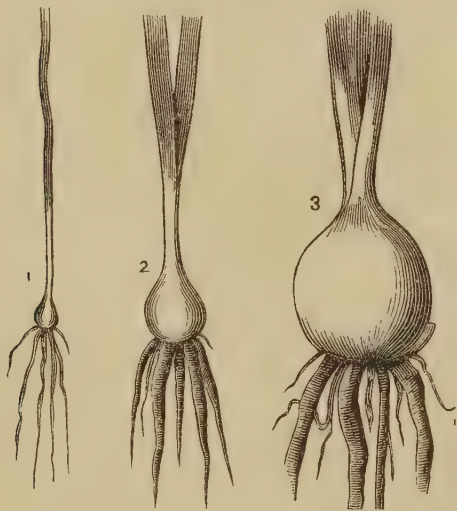
This is the largest leaf yet mentioned by any of our friends, and, if it is beaten, we hope it will be by fair measurement; not by stretching the—imagination.

DAHLIA AND GLADIOLUS SEEDLINGS.

I was induced to buy Dahlia seeds this year by reading a lady's letter, understanding that flowers could be got from the seed the first year; now I am informed that only tubers can be had from seed the first year. How is it? If I sow Dahlia and Gladiolus and seeds of other perennials in my cold-frame, can I successfully raise them there, and leave them until fall; and then shall I dig up the bulbs and leave the perennial plants in the frame until spring? I would, of course, endeavor to guard against too much heat in summer.—E. C. T., *Douglas, Ill.*

Dahlia seed, if sown early in the spring and given a good chance, so that the plants grow without any check through the summer, will usually flower in the autumn, and form bulbs that must be taken up in the autumn and stored away for spring. The best way is to sow the seed in boxes, or hot-bed, or cold-frame, and transplant to the open ground when the plants are small, say the first or middle of June. If allowed to remain where the seed is sown the plants would be too close together, and would not flower and form but poor tubers.

Gladiolus seed should be sown in a cold-frame or box, and remain undisturbed until



autumn. Nothing will be seen the first summer but grass-like leaves. A little shade is well in very hot weather, and water in drouths. In the fall the largest bulbs will be found as shown by figures 1 and 2 of our engraving, and must be gathered before frost. Withhold water late in the season, and the little bulbs will ripen and can be gathered by taking hold of the grass and pulling gently, at the same time loosening the earth with a trowel, if necessary. Keep them out the way of frost until spring; then sow in drills, like Peas, and at the end of the second summer the bulbs will be like figure 3. The third summer they should be planted out separately, twelve inches apart, and most of them will flower.

Perennials may be allowed to remain in the

cold-frame until autumn of the following spring, if not so close as to spoil each other, but it would be better to start them pretty early and in the early summer remove the young plants to the beds where they are to flower—in the North from the middle of May to the first of June. Even later than this will answer, with care in removal and protection from the sun for a few days.

SOOT AS A FERTILIZER.

MR. JAMES VICK:—Will you answer through the columns of your *ILLUSTRATED MONTHLY* if soot can be used advantageously as a fertilizer? When, and how, and in what quantities can it be used? Will it improve the growth of Strawberries?—H. A. J., *Worcester, Mass.*

The value of soot as a manure has been fully shown in former numbers of the *MONTHLY*. As recent testimony, we give the words of a correspondent from Indiana, who says, "Your article on soot attracted my attention, and I engaged all I could of a manufacturing establishment—bituminous coal soot; I secured a few barrels, and now get a barrel a week. I gave Roses and other plants a large dose of strong soot-tea;—my wife said I would kill all the plants in the house, and I feared it myself, but they are all growing rank under its influence. Soot is ammonia, sulphur and carbon, I think. I wish I had the chemical formula of its composition. Of course I shall use most of it outside in the open ground. I think the vigorous growth it ensures enables the plants to withstand the insect ravages."

There is probably no crop upon which soot cannot be used to advantage. In the liquid form it can be used in the proportion of a peck to a hogshead of water, and for Strawberries just as they are swelling this would be the best method of applying it. On Turnips as a field crop, for protection from the fly, it can be used at the rate of twenty bushels to the acre. As a top-dressing to grass lands, or to be dug into the garden, it can be applied at the rate of forty or fifty bushels to the acre, more or less, according to convenience. One hundred bushels to the acre will do no harm.

An analysis in France of a sample of soot taken from a chimney where wood had been the fuel used showed, among other constituents, twelve and a half per cent. of water, over twenty per cent. of nitrogenous matter, twenty-seven per cent. of soluble compounds of lime and potash, and thirty per cent. of humic acid. With such an exhibit we should expect splendid results from its use, as there always is. Soot from coal is usually thought to be better than that from wood, and it is best when made in a chimney of low heat. Soot is valuable, not

only as a manure, but to drive away insects that attack young Cabbage, Turnip, Radish, and other plants; like any gritty substance, it repels them, and the bitter principle it contains, when dissolved by the rains or dew and spread on the leaves, is disagreeable to them. It is one of the most valuable substances the gardener can employ.

SOLANUMS.

I have made up my mind that your MAGAZINE is what every flower-grower needs, and every succeeding number corroborates this opinion. Your last is one of the best; that engraving, page 95, the barefoot boy lying down watching the Water Lilies, is just grand. God never made a more desirable flower than a white Water Lily; and then, the idea of their growing in the water!

Oh, the flowers, the beautiful flowers,
How they cheer and brighten this world of ours!

I desire to ask a question for the benefit of several of your patrons. I have two plants, called by some "Forbidden Fruit," and by others "Touch me Not" and "Adam's Apple." I cannot find it in the botany, and our Solons do not know what it is. One kind grows six feet, and bears orange-colored fruit as large as a hazelnut; the other bears fruit as large as a hickory-nut, of a scarlet color, very pretty and showy. The foliage and habits is the same as that of the former, but it grows only two feet high. I distributed seeds at the Fair and called it "Solanum" something. I enclose you a leaf and a portion of the larger fruit. Now, friend VICK, what is it?—A. M. E., *Ottawa, Ill.*

The leaf and fruit received are those of *Solanum aculeatissimum*, a plant often reared for its ornamental appearance when in fruit. *Solanum Pseudo-Capsicum*, *S. Pseudo-Capsicum nanum*, and *S. capsicastrum*, all familiarly known as Jerusalem Cherry or Dwarf Jerusalem Cherry, are similar in their fruits, and for the beauty of which they are cultivated.

IN TROUBLE AGAIN.

MR. JAS. VICK:—I have been a subscriber to your books sixteen or seventeen years. I know you are the master of your MAGAZINE, so I cannot say what shall go into it and what shall not, and I had thought I would never trouble you again about the questions I asked you to answer in the MAGAZINE; but you would not do that because they were about my failures. But you sent me a letter—yes, a letter which I could not read; so I had to run up town to get some doctor or lawyer to read it for me. Now, if you had answered them in the MAGAZINE I could have referred to it in a minute at any time, for I always keep them handy for reference.

Do you think the Tree Pæony would stand our winters here in Iowa? Can you tell me where I can buy the fine-leaved Pæony, as I want to get one this next fall? Can you tell me the name of that double Tulip you gave a colored plate of in the fall of 1866?—J. B., *Decorah, Iowa.*

We fear our friend desires information on too easy terms. If we take the trouble to read his questions, he certainly should be willing to take a little pains to read our answers without asking for them in plain printing. Suppose we were to refuse to pay any attention to correspondence unless very plainly written or printed. We are

obliged to wade through scores and hundreds of manuscripts every day, and some of them we know would be beyond the skill of minister or lawyer, even though the latter was of the Philadelphia kind.

It is our design to answer by private correspondence such questions as are not of general interest to our readers. For instance: one of the questions above is of this character; for who but the writer would be benefited by knowing the name of a Tulip, an engraving of which we published thirteen years ago, and which



perhaps not one in a hundred of our readers ever saw. However, by the aid of an illustration perhaps we can answer the question in a way to make it of general interest. This Tulip is double, though not perfectly so—rather semi-double—is of large size, and flowers late. The ground is pure white, striped with red. It has a French name, *Mariage de ma Fille*, meaning Marriage of my Daughter. The story is that it was first sold to the public by the gentleman who grew it from seed in the year that his only daughter was married. We give a little engraving of this Tulip, which will show something of its form, but nothing of its gay colors.

The Tree Pæony is perfectly hardy in this section, and we think would be in Iowa, but would like information on this point from some of our correspondents in that State. There are several fine-leaved Pæonies. The one with the finest foliage is *tenuifolia*, but has not seemed quite hardy. The flower is dark, single or semi-double, and very early. *Miniature* and *Smithii* are better, but the flowers of none of the fine-leaved sorts are as fine as those of the broad-leaved varieties.

THE WILD-GARDEN.

MR. VICK :—I would like to be advised by you. On one side of my lawn, about four feet from the fence, is a ditch where the water runs spring and fall; between this ditch and the fence are willow trees where not much grass grows and which I cannot well cut with a lawn mower. Can you tell me what grass, vines, or flowers I can sow or plant on this ground among those trees that will endure this cold section, look well, and need no mowing. The space of ground is about four feet wide by one hundred long.—M. N., *Martinsburgh, N. Y.*

This is just the place for a wild-garden, and here may be collected specimens of some of our handsome native plants and hardy ferns. Let the woods of your section contribute some of the choice treasures which we know are to be found there. Many interesting plants may have a home provided for them in this spot which would otherwise remain in seclusion. Besides the wild plants, some plants of *Dicentra*, Lily of the Valley, *Aquilegia*, Day Lily, Violets and other herbaceous perennials can be introduced. The Periwinkle or *Vinca minor* will clamber over the bank and ground, and *Clematis Virginiana* and *C. flammula* will climb on the Willow trees. In a short time this strip could be made the most inviting part of the grounds.

RHODODENDRON.

I purchased a Rhododendron a short time ago, but have no information about it. Will you please give its character and proper treatment.—J. G. T., *Mobile, Ala.*

The Rhododendron, in your locality, should be treated as a hardy shrub. We should only fear drought, and perhaps too full exposure to the sun, and consequently would prefer to plant it where it would receive the sun only before noon, and be shaded, at least to some extent, in the afternoon. The east or north side of a building would be better than other sites; or better still, in the neighborhood of large trees, but not directly under them, where during the middle and latter part of the day they would receive more or less shade.

HEALTH AMONG THE FLOWERS.

I think you are doing a good work, cultivating the love of flowers among all classes. You have done me a great deal of good. I think it was fifteen years ago that I first caught sight of the advertisement of your *Catalogue* and sent for it. I was at that time seemingly near to death with lung complaints, but my love of flowers, stimulated by your inspiring words in the *Catalogue*, sent me out into the garden. I don't suppose you remember it, but my first order was for ten dollars worth of seeds. Of course, inexperienced as I was, my garden was not a success; but the benefit to me was incalculable, for I discovered that for me health lay out of doors. Although I never am strong, yet

I am sure to have a garden of flowers, from which I can send bouquets to my strong, healthy neighbors who are not "rugged enough to raise flowers;" but then, I have willing helpers in my husband and my two boys, because they love the flowers and would miss them as much as I would.—MRS. E. A. W., *White Pigeon, Mich.*

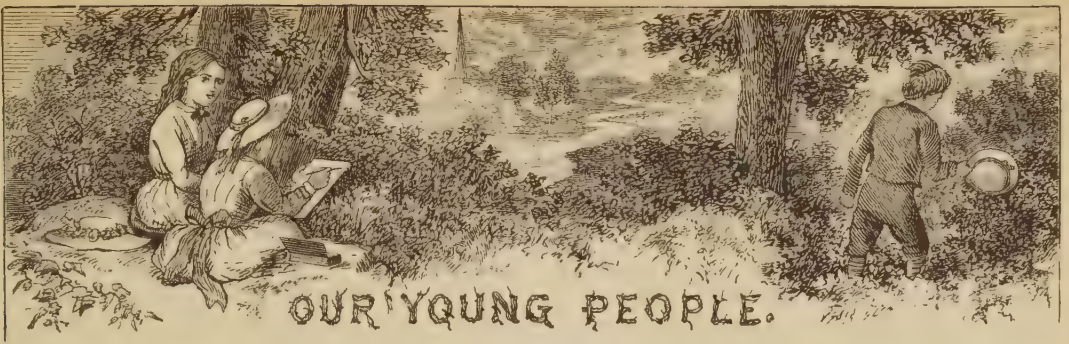
POST OFFICE NONSENSE.

We once thought the American postal laws had monopolized about all the foolishness that could be crowded into the business, but we see our Canadian neighbors are claiming a small share. The laws of Canada forbid sending silver out of the country, and so scores of letters addressed to us, and containing anywhere from five to twenty-five cents each, have been stopped by the Postal Department within the past month or two. We have no desire to drain the Provinces of their silver and thus cause embarrassment and ruin to our good friends over the Lake. Seriously, however, this looks like very small business. We hope the time will soon come when all governments will regard the convenience and good of the people, and endeavor to aid, instead of embarrassing business. The Government of the Dominion has not yet arrived at the sublime stupidity of charging their own people four times as much postage as that paid by foreigners.

SCHOOL HOUSES IN EUROPE.

The Editor of the *Pennsylvania School Journal*, traveling in Europe, writes:—"Many of the country school-houses in all parts of Europe have gardens attached to them. We frequently noticed them in traveling through Belgium, Switzerland, Germany, and Holland. They are not only used for ornament and to grow vegetables for the use of the teacher and his family, but they are made to serve an important purpose in the work of instruction. Children in the public schools are generally taught the elements of agriculture and horticulture, and these gardens are used to illustrate the lessons and to try experiments. It is a pleasant sight to see a teacher, surrounded with children, giving instruction in one of these gardens; and we often thought as we saw a teacher spending a morning or an evening working in his garden among fruit, flowers or vegetables, that he was a better teacher and a better man in consequence of it."

PEARLS IN PEA-PODS.—At a recent ball, a lady is stated to have appeared in a white silk dress with beautiful lace and sprays of green Pea-pods half open, showing the Peas inside, which were pearls.—*English Journal.*



BOTANY FOR LITTLE FOLKS.

Nature delights in variety. What innumerable forms animal and vegetable life assume! Let the mind recall for a moment some of the many creatures that inhabit air, earth and water. How varied is every feature, from the graceful to the grotesque, from the beautiful to the repulsive! What an inexhaustible realm, too, does the microscope open; and how do we stand mute with astonishment before the revelations of nature! As among animals, so we

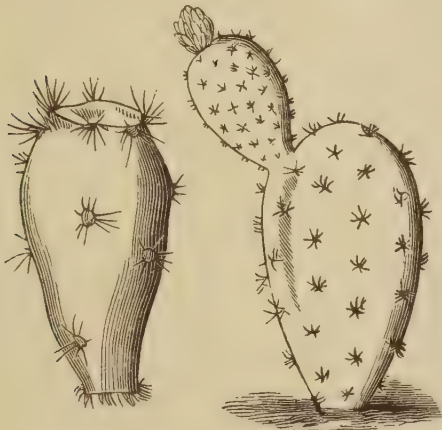


Fig. 170. *Opuntia vulgaris*. Branch and Fruit.

find among plants this endless change in form and aspect. From the humble grass that we see

"Creeping, creeping everywhere,
By the dusty roadside,
On the sunny hillside,
Close by the noisy brook,
In every shady nook,"

or yet from the still humbler fungus, mushroom or toad-stool, or that that only shows itself to the naked eye as mould, or exhibits its structure only to the most powerful instruments the skill of man has fashioned, upwards through ceaseless gradations and changes, to the beautiful flowering plants, the "Lilies of the field," the "vine and Fig tree" and the "Cedars of Lebanon," to the "Big Trees of California."

All these changes of form and structure appear to adapt the individual or the family to a mode of life in some degree different from that

of others. As we know that a cow will browse on a pasture when a horse can no longer graze, and that a sheep or goat will feed after a cow, and that geese will find abundance after the sheep; so all animals and plants are fashioned in a way that they are capable of life under conditions that would be poorly adapted, or entirely unsuitable, to those of a different organization. By such adaptation of structure to circumstances, all nature teems with life. In our studies heretofore, we have discovered that the varied forms of vegetation are due to simple changes in a few parts or organs that are essential to all plants.

In regard to animals the same principal is true. The most careless observer notices how the lengthening of the bones in one or both pairs of legs, the lengthening or curving of the spine, the shortening or lengthening of the ears and tail, the enlargement of the nasal apparatus to form a snout, and its lengthening to a trunk or proboscis, and similar or corresponding changes in other organs affect the form of animal structure.



171. *Mammillaria Lehmanii*.

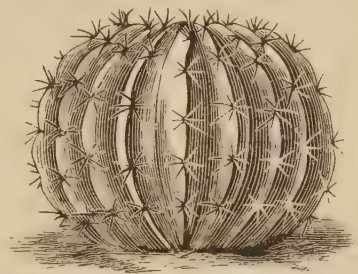


Fig. 172. *Echinocactus platycarpus*.

So, too, the structures of beast, bird and fish are easily comparable, and their principle organs shape themselves to best serve the peculiar mode of life, whether upon the ground, or in the air or water.

The variety of form and organization of plants corresponds to the infinitely varied conditions in which plant life is possible. As "fat pastures make fat calves," so we find that the same kind of plant is very much affected by the place where it grows. The Pines and the Oaks that are of vast proportions in the valley become merely stunted shrubs high up the mountain. Some plants will endure much cold but are incapable of bearing heat or drouth, while others delight in warmth, but instantly perish before a northern blast. On the heated, arid plains of some parts of the southern portion of this continent and the tropical part of South America is found a class of plants peculiarly adapted to life in that region; we refer to the Cactus, with some form of which almost everybody is familiar.

Few persons that have petted a Cactus plant in a pot for its oddity, or for its beautiful flowers, are aware to what dimensions, under favorable conditions, some members of this family attain. We present our readers with a scene in New Mexico, in which the Giant Cactus, *Cereus giganteus*, is the prominent and striking object. Dr. ENGELMANN, one of our leading botanists, who visited this section some years since, says: "As far as the eye can reach, in the valleys or on the mountains, little else but rocky boulders and the stately yet awfully sombre aspect of the *Cereus giganteus* can be seen." These plants attain a height of fifty or sixty feet, and have but few branches. The branches start out at right angles to the main stem, and then turn directly upwards. "The stems are gradually ribbed or fluted, the ribs varying in number from twelve to twenty, and have, at intervals of about an inch, thick yellow cushions, bearing five or six large and many smaller spines. The flowers are produced near the summits of the stems and branches, and are about four or five inches long by three or

four inches in diameter, having light, cream-colored petals. The fruits are about two or three inches long, of a green color, slightly reddish at the upper end, and oval in form, having a broad scar at the top caused by the flower falling off; when ripe they burst into three or four pieces, which curve back so as to resemble a flower. Inside they contain numerous little black seeds embedded in a crimson-colored pulp of a sweet but rather insipid flavor.

The Pimos and Papagos Indians, who eat the ripe fruit, gather it by means of a forked stick tied to the end of a long pole." When the plants arrive at their full age, said to be between three and four hundred years, they dry up and split to pieces and fall away.

Nearly all the forms which the different kinds of Cactus assume are compact, exposing only a small surface to the air compared with their bulk. The surface or green skin, or rind, performs the function of leaves, and as it is thick and firm evaporation is slight, and the circulation of the plant is slow, and its annual growth small. The inner structure of the plants shows little woody fibre but a mass of succulent tissue; formed in this manner they are capable of storing up and holding, during the long drouths to which they are exposed, the moisture they take up in the rainy season, when they are growing.



Fig. 173. Scene in New Mexico. *Cereus giganteus*.

Although most species of Cacti require a high temperature, a few of them are sufficiently hardy to bear our northern winters. The common Prickly Pear, *Opuntia vulgaris*, grows on the sea-coast of New England, and in some places on the banks of the Hudson. *Opuntia Missouriensis* is found on the shores of Lake Michigan, and the banks of the rivers in Wisconsin and westward. *Opuntia Rafinesquii* grows in southern Illinois and westward. We notice that our English friends are interested to find that this plant has stood the past

winter unharmed at Bristol, where it has been unusually cold. We can assure them that the test to which the plant has been exposed there is much less severe than it frequently receives in its native region.

"The *Opuntia* presents the appearance of a succession of flat, bushy branches with tufts of prickles and spines disposed at almost regular distances over their surfaces. The flower of the



Fig. 174. *Opuntia*. Section of Flower.

Opuntia, fig. 174, shows no calyx, as it is adherent to the ovary but not produced beyond it, except as a mere ring upon which are situated the numerous pistils and stamens. The petals are yellow, and the inner ones are larger than the outer. The stamens are in several rows or series, and the inner ones shorter and smaller than the others. The style is simple, but it is crowned with six stigmas. A view of the style magnified is given at figure 175. The diagram of the bud, fig. 176, shows the several rows of petals and stamens, and the divisions of the ovary. The fruit is an oblong, fleshy berry, as seen at fig. 170. The number and the general arrangement of the parts of the flower of the *Opuntia* are similar to those of other species of Cacti, only that in the other species, with the exceptions hereafter to be noticed, the united sepals extend out into a tube longer or shorter.



Fig. 175. *Opuntia*.
Pistil magnified.

The different kinds of Cacti are arranged in genera according to the forms of the plants and their modes of flowering. As we have noticed, the calyx of the *Opuntia* does not extend beyond the ovary. This feature belongs also to the *Pereskia* and the *Rhipsalis*. The *Rhipsalis* is further distinguished by its slender and cylindrical stem and

branches, while the *Pereskia* is a remarkable member of the family from the fact that it has true leaves. Besides the genera now mentioned, all the others have calyx tubes formed by the united sepals extending beyond the ovary.

The *Melocactus*, commonly called Turk's-Cap Cactus is distinguished by its globular form and

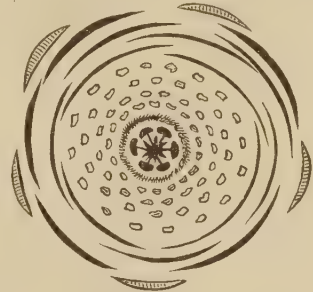


Fig. 176. *Opuntia*. Diagram of Flower.

by producing its flowers on a head or cap at the summit of the plant. The head is covered with wooly hairs. *Mammillaria*, meaning nipple-bearer, is quite distinct, having its surface covered with little nipple-shaped bodies, between which the flowers arise and the fruit lies. *Echinocactus*, or Hedge-hog Cactus, is another distinct form not difficult to recognize. It is globular when young, with many furrows and ridges furnished with clusters or whorls of spines. The flowers are produced from the summit of the ridges. The *Cereus* usually has an elongated stem which is regularly ribbed or angled, and with bristles or spines regularly arranged along the ridges. The flowers are produced on the ridges and usually have a long

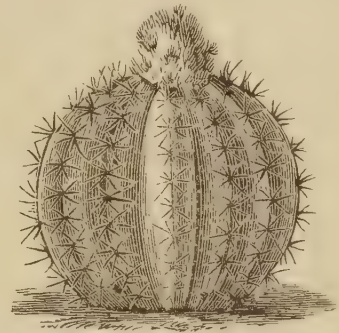


Fig. 177. *Melocactus communis*.

tube. The Night-blooming *Cereus*, *C. grandiflora*, is one of the favorites in cultivation from this genus. The *Phyllocactus*, meaning Leaf-Cactus, is distinguished by its leafy branches, which arise from the sides of the stem or other branches; the stem and branches with age become cylindrical, or, as botanists say, terete. The flowers are borne at the notches on the margin of the branches. *Epiphyllum*, name derived from *epi*, upon, and *phyllon*, a leaf,

bears its flowers usually upon the ends of the flat, leafy branches.

The genera we have described and illustrated are the principal divisions of this family. With the exception of a species of *Rhipsalis* which grows on the west coast of Africa and in the island of Ceylon, these plants are to be found in their wild state only in this country; besides in the tropics, they grow in immense numbers in some parts of California, Colorado, Kansas, New Mexico and Arizona. The most valuable



Fig. 178. *Rhipsalis funalis*.

kind in cultivation is the *Opuntia* or Prickly-pear, for upon a species of this plant the Cochineal insect lives; in the southern part of Mexico, Central America and the Canary islands the plant is largely grown and the insects reared. From the cochineal insect is prepared a very valuable crimson dye known as cochineal red, and other dyes called carmine and lake.

The fruit of *Opuntia* besides its common name, Prickly-pear, is also called Indian Fig, and in some parts of Europe it is known as the Barbary Fig; it is eaten as a dessert fruit, but as such it does not possess very high qualities in the estimation of those having an abundance of the finer cultivated fruits. Tastes, however, differ, and in the Canaries and West India Islands it is largely consumed, as it is also in Algeria and other parts of the Mediterranean countries. In the island of Sicily there is said to be ten thousand acres under culture of this Cactus, for its fruit. An English traveler in Corsica, three or four years since, thus describes a scene: "It was an amusing sight just now to see a mother feeding her four children, all sitting on their haunches in open air, from a basket of Barbary Figs. I was puzzled at first at the gloves, the pocket handkerchiefs, and the evident desire to clean the fruit of every particle of rind; but, happening to try one my-

self, I found that every hair of the soft, furry-looking substance outside was as sharp as a needle, and penetrated fingers, lips and tongue. We are taught by experience; and though Barbary Figs are sold at ten a penny, I shall not be inclined to try them again." In Mexico and the Southern States the *Opuntia* is quite frequently employed as a hedge plant, and forms an impenetrable barrier.

As before noticed, the natives eat the fruit of the Giant Cactus. The interior of the fruit is of beautiful red color, and the pulp is said to be very palatable, resembling the Fig,

only more juicy. The fruit is preserved and also made into syrup and kept in earthen jars; the Pimos Indians also prepare from it a clear, amber colored wine, which the Mexicans call *tiswein*. This wine is very intoxicating, and when it is ready for use the Indians hold their annual drinking festival.

Another species of Cactus, *Echinocactus Wislizeni*, serves useful purposes. Its small, black seeds are dried, parched, and pulverised finely in a mortar, and the meal used in gruel and sometimes made into bread. The fruit of this plant is sour and not much relished, but the inner part of the plant itself is soft, juicy,



179. *Cereus speciosissimus*.



Fig. 188. *Pereskia grandifolia*.

slightly acid and agreeable to the taste, and is often resorted to by the thirsty traveler when no other source of water is at hand. "An Indian when traveling and wishing to make a meal, selects a large plant, three or four feet long, and two feet in diameter, cuts it down and hollows it out so as to form a trough. Into this he

throws the soft portions of the pulpy substance which surrounds the central woody axis, and adds meat, roots, seeds, meal, fruits, or any edible thing on hand; water is added, and the whole mixed together. Stones are then highly heated and dropped into the mixture; and as they cool are taken out, licked clean, re-heated, and returned to the cooking vessel, until the mixture is thoroughly boiled. This is a favorite dish with the Yavapai and Apaches of Arizona." Horses and mules often kick the Cactus plants open to get the juicy flesh.

Notwithstanding the rough exterior these plants present, their flowers are mostly showy, and some of them are of exquisite beauty. By cultivation many hybrid species and varieties have been produced which are highly prized. Although we would not recommend Cacti for general culture, still there are many that will find in these plants sufficient interest to claim



Fig. 181. Epiphyllum.

their attention, and receive an abundant reward in their flowers for the little care they demand. The flowers of the different kinds are of many shades of color—white, crimson, scarlet, violet, carmine, rose, purple, red and yellow. There are other night-blooming species besides *Cereus grandiflorus*, which was illustrated in our last number. A variety of this species called *McDonaldi* has larger flowers than *grandiflorus*; and they are very beautiful, the center petals being white, and the exterior ones red or orange. *C. carulescens* and *C. azureus* are also desirable night-blooming sorts.

C. speciosissimus is a species of branching Cactus like *C. grandiflorus*, producing tubular flowers three or four inches in diameter, with purple-crimson colors, and with rainbow reflections within. It has been known to cover a

space of one hundred and twenty-five feet on the back wall of a hot-house, and to produce thousands of flowers annually. A variety has been produced by fertilizing this species with the pollen of *C. grandiflorus*, and the result is a flower nine or ten inches in diameter, and of

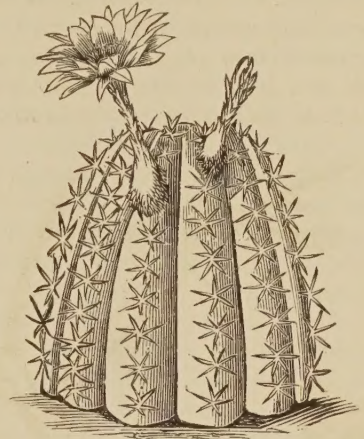


Fig. 182. Echinocactus Decaisneana.

a color varying from a bright red to a brilliant crimson; though, like *C. grandiflorus*, it opens at night, yet it remains open three or four days. This variety is known as *C. grandiflorus Maynardi*. A large plant of it in bloom is a magnificent sight. *C. flagelliformis* has a creeping or trailing stem, and produces its bright rose-colored flowers in abundance. The flexibility of this plant allows it to be twined into wreath-form and various other ways. Many other interesting species and varieties of *Cereus* could be described, as this genus is particularly rich and full.

Let us now glance at another section, the Epiphyllums.

E. truncatum is a species much cultivated on account of its numerous beautiful orange-scarlet flowers, and from it have been raised a great number of varieties; among them is *album violaceum*, with flowers white and edge of petals margined with violet. *Bridgesi* has

flowers of a deep, rich violet; *salmonium flavium*, flowers salmon shaded with sulphur; *E. latifrons* is a night-blooming species, with large cream colored flowers that exhale a sweet odor.



183. Phyllocactus biformis.

E. speciosum has branches fifteen to twenty inches in length; its numerous flowers, springing out near the summit of the stems, are of a beautiful rose color.

Phyllocactus Ackermanni is a valuable species bearing rich crimson flowers with violet center. *P. crenatus* has sweet-scented white flowers, seven or eight inches in diameter, which remain open several days. *P. grandiflorus roseus* bears flowers of a delicate lilac, shaded with lavender. The *Mammillarias* and *Echinocacti* also present many species and varieties of much interest, and producing flowers of great beauty.

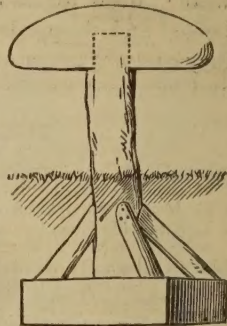
The treatment the Cactus demands is simple. The potting soil should be light, fresh and fine; good loam, leaf-mold and sand in equal parts is a suitable material. During the winter the plants should be kept in an even temperature of about fifty degrees, and only water sufficiently to keep the soil from becoming dry;—extreme dryness is not desirable. As soon in the spring as mild weather sets in, the plant should be repotted. When the potting of a plant is finished its base should be even with or rest upon the soil, and not be buried in it; a few pegs may be necessary to keep the plant in position until it is established. When the potting is finished, water well through a fine rose to settle the soil, and afterwards water moderately until growth commences, when it can be given freely. As soon as danger of frost is past the pots may be plunged in the open border with a full exposure to the sun, except in the case of *Epiphyllum* and *Rhipsalis*, which should be at least partially shaded. If the newly potted plants can have the benefit of a good hot-bed, and remain in it for two or three months, their increased vigor and growth will repay this extra care. Another method is to turn out the plants from the pots in the spring, into an open border or bed well drained and prepared with a good mixture of leaf-mold and sand. Here the plants will grow vigorously all summer. In the fall they should be taken up and potted, and may be kept over winter in any dry and well lighted room where the temperature does not vary much from fifty degrees. It will be seen that these plants may be cultivated and enjoyed without the aid of any kind of glass-house or conservatory.

AMERICAN POMOLOGICAL SOCIETY.

The regular biennial session of the American Pomological Society will probably be held in this city next September. The final decision to this effect has not yet been made, but there is little doubt of the result, according to reliable information, and we hope in our next issue to make the announcement authoritatively, and give the exact time of meeting.

MUSHROOM-STOOL.

A correspondent inquires how to construct a mushroom-stool like that shown in the April number. The London journal from which the suggestion about this seat was derived, furnishes by a correspondent an answer to a similar inquiry: "The top should be formed from a slice from a tree-stem; this should be about eighteen inches in diameter, and five inches in thickness; its upper surface should be planed round, so as to let it take the form shown in the illustration. The stem should be formed from part of another tree-stem two feet long and at least four inches in diameter when barked. The upper part of the stem must be cut square or round, so that the stem may be firmly fixed at least two inches into the top. The lower part of the stem must rest on a plank eighteen inches square or eighteen inches in diameter, and four inches in thickness; this in its turn must be supported by at least three strong braces, as shown in the engraving. A hole eighteen inches square and the same in depth must be dug in the ground to receive the base, which latter may be well pitched before insertion, to protect it from the moisture of the soil. The earth must be well rammed down both before and after the insertion of the stool."



PUBLICATIONS RECEIVED.

- Additional Facts and Information in Relation to the Catalpa Tree, *Catalpa bignonioides*, and its Variety, *C. speciosa*. E. E. Barney, Dayton, O. Pp. 36.
- The Diseases of Live Stock and their Most Efficient Remedies; including horses, cattle, sheep and swine. By Lloyd V. Teller, M. D. Philadelphia: H. C. Watts & Co. Pp. 469; \$2.50.
- Fourteen Weeks in Botany. By Alphonso Wood, A.M., and J. Dorman Steele, Ph. D. New York: A. S. Barnes & Co. Pp. 318; \$1.25, by mail, prepaid.

This small volume, from the house of A. S. Barnes & Co., is a valuable contribution to the Natural Science Series which they are now issuing. It is the work of Professor Wood, the well-known botanist, and Dr. J. Dorman Steele. The language is simple, clear and concise, and the illustrations are full, and of excellent character. The foot-notes convey a great amount of interesting information, though not pertaining directly to the subject of the text. The use of a systematic form for recording the results of analysis is explained and enforced. In the hands of the teacher, this book will be a valuable aid in imparting elementary principles and awakening an interest in botanical pursuits.



J. H. Schuchman & Co. Boston, U.S.A.

PAINTED FOR VICKS MONTHLY.

GROUP OF FLOWERING BEGONIAS.